FCC TEST REPORT

According to

FCC Rules and Regulations Part 15 Subpart C

Applicant	:	QNAP System, Inc.
Address	:	2F., No.22, Zhongxing Road, Xizhi District, New Taipei City, 221 Taiwan
Equipment	:	QGenie
Model No.	:	QG-103N
Trade Name	:	QNAP
FCC ID	:	2ACFNQG-103N

- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of **Cerpass Technology Corp.,** the test report shall not be reproduced except in full.
- The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

Laboratory Accreditation

TAF Testing Laboratory 1439

NVLAP LAB CODE: 200954-0

Contents

History of this test report

■ ORIGINAL.

☐ Additional attachment as following record:

Attachment No.	Issue Date	Description
TEFI1405052	Jun. 03, 2014	Original.

CERTIFICATE OF COMPLIANCE

According to

FCC Rules and Regulations

Part 15 Subpart C

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Model No.	:	QG-103N
FCC ID	:	2ACFNQG-103N

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 2009, KDB558074 & KDB662911** The equipment was ***passed*** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2010).**

The test sample was received on May 27, 2014 and the testing was carried out on May 29, 2014 at Cerpass Technology Corp.

Approved by:

Hill Chen
EMC/RF B.U. Assistant Manager

Tested by:

Aiden Lu
Engineer

1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC Rule	. Description of Test	Result
15.203	. Antenna Requirement	Pass
15.207	. Conducted Emission	Pass
15.209 15.247(d)	. Radiated Emission	Pass
15.247(a)(2)	. 6dB Bandwidth	Pass
15.247(b)	. Maximum Peak Output Power	Pass
15.247(d)	. 100kHz Bandwidth of Frequency Band Edges	Pass
15.247(e)	. Power Spectral Density	Pass
1.1307 1.1310 2.1091 2.1093	. RF Exposure Compliance	Pass

2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Operating temperature	0 °C to 45 °C (32 °F to 112 °F) (During normal operation) 0 °C to 45 °C (32 °F to 112 °F) (When charging the built-in battery)
Charge time/Use time	Charge time: Approx. 3.5 hours when connect to PC or using AC adaptors. The charge time depends on the PC configuration, USB AC adaptor you use, and the status of QGenie. Use time: Approx. 10 hours (continuous playback of MP3 at 128 Kbps) Approx. 6 hours (continuous playback of MP4 at 3 Mbps) Approx. 6 hours (continuous playback of MP4 at 12 Mbps)
Wireless	Standard: IEEE 802.11b/g/n (2.4 GHz) Frequencies (channels): 2,412 MHz - 2,462 MHz [CH1-11]
Interfaces	USB 3.0 A port USB 3.0 micro B port Memory card slot (SDXC memory card) RJ-45 Ethernet cable
USB A port output	DC 5V, 1500 mA (maximum)
USB micro B port input	DC 5V, 1.5 A (maximum)
Average power consumption	Approx. 5.0 W (maximum)
Compatible memory cards	SD, SDHC, and SDXC memory card microSD, microSDHC, microSDXC memory card If you use microSD memory card with this unit, be sure to put it in dedicated converter.
Supported USB devices	
Data Functions	USB Flash Drive USB Hard Drive
Battery Charging Functions	Smartphone USB-charge compatible devices Operation with all USB devices is not guaranteed.
Compatible Operating Systems	Android 4.0 or later iOS 6.0 or later Windows XP SP3 or later Windows Vista SP2 or later Windows 7 SP1 or later Windows 8 Mac OS X version 10.6 or later
Dimensions (W × H × D)	Approx. 58.5 mm × 115 mm × 17.5 mm
Mass	Approx. 112 g

RF Part

Operating Frequency	2412-2462 MHz
Type of Modulation	DSSS, OFDM
RF Technology	802.11b, 802.11g, 802.11n-HT20, 802.11n-HT40
Number of Channels	11
Channel spacing	5MHz
Antenna Type	Chip Antenna
Antenna Gain	2.0dBi

2.2 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT 20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***01**	**2412**	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	***11**	**2462**
***06**	**2437**	---	---

802.11n, HT 40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***03**	**2422**	07	2442
04	2427	08	2447
05	2432	***09**	**2452**
***06**	**2437**	---	---

Note: Channels remarked * are selected to perform test.

2.3 Test Mode and Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b. The complete test system included Notebook and EUT for RF test.
c. Two executive programs" Putty" and "MT7620QA" under WIN XP was executed to keep transmitting and receiving data via Wireless.
d. Power output(dBm) of data rate:

mode	rate	1M		2M		5.5M		11M	
802.11b	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	15.91	12.40	15.89	12.37	15.88	12.35	15.85	12.32
	6	16.38	12.90	16.36	12.88	16.35	12.85	16.33	12.83
	11	14.92	11.39	14.88	11.37	14.85	11.35	14.82	11.33
mode	rate	6M		9M		12M		18M	
802.11g	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	21.71	12.85	21.12	12.83	21.55	12.80	20.93	12.77
	6	21.68	12.81	21.23	12.80	21.40	12.76	21.11	12.74
	11	20.95	12.63	20.63	12.60	20.89	12.57	20.34	12.54
mode	rate	24M		36M		48M		54M	
802.11g	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	21.46	12.75	20.82	12.72	20.52	12.69	21.62	12.63
	6	21.15	12.72	20.76	12.68	20.58	12.65	21.55	12.59
	11	20.77	12.52	20.21	12.50	20.07	12.47	20.91	12.43
mode	rate	MCS0		MCS1		MCS2		MCS3	
802.11n HT20	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	21.44	12.72	21.27	12.69	20.95	12.67	21.35	12.65
	6	21.52	12.82	21.22	12.80	21.18	12.78	21.40	12.75
	11	21.12	12.58	20.87	12.56	21.00	12.54	21.05	12.51
mode	rate	MCS4		MCS5		MCS6		MCS7	
802.11n HT20	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	20.70	12.62	20.90	12.60	20.60	12.57	21.27	12.52
	6	20.83	12.74	20.92	12.72	20.85	12.70	21.36	12.67
	11	20.45	12.47	20.32	12.45	20.15	12.41	20.72	12.36
mode	rate	MCS0		MCS1		MCS2		MCS3	
802.11n hHT40	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	3	21.05	12.87	20.97	12.85	20.94	12.83	20.96	12.81
	6	21.15	12.95	21.07	12.92	21.03	12.88	21.05	12.85
	9	20.82	12.77	20.69	12.77	20.67	12.75	20.64	12.73
mode	rate	MCS4		MCS5		MCS6		MCS7	
802.11n hHT40	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	3	20.85	11.78	20.93	11.79	20.97	11.80	20.85	11.78
	6	20.82	12.18	20.98	12.20	21.10	12.21	20.82	12.16
	9	20.25	11.68	20.51	11.70	20.70	11.73	20.21	11.71

2.4 Description of Test System

Device	Manufacturer	Model No.	Description
Notebook	ASUS	A8J	Power Cable Unshielding 1.8m

Use Cable

Cable	Quantity	Description
Network Cable	1	Unshielding, 1.2m

2.5 General Information of Test

Test Site :	Cerpass Technology Corporation Test Laboratory No.10, Lane 2, Lianfu Street, Luzhu Township, Taoyuan County 33848, Taiwan(R.O.C.)
Test Site Location :	2F-11, No. 3, Yuan Qu St., (Nankang Software Park), Taipei, Taiwan 115, R.O.C.
Test Site Location (OATS2-SD) :	No.68-1, Shihbachongsi, Shihding Township, Taipei City 223, Taiwan, R.O.C.
FCC Registration Number :	TW1049, TW1061, 488071, 390316
IC Registration Number :	4934B-1, 4934D-1, 4934E-1
VCCI Registration Number :	T-1173 for Telecommunication Test C-4139 for Conducted emission test R-3428 for Radiated emission test G-97 for radiated disturbance above 1GHz
Frequency Range Investigated:	Conducted: from 150kHz to 30MHz Radiation: from 30MHz to 25,000MHz
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.

2.6 Measurement Uncertainty

Measurement Item	**Uncertainty**
Radiated emission	±4.11dB
Peak Output Power(conducted)	±1.38dB
Peak Output Power(Radiated)	±1.70dB
Power Spectral Density	±1.39dB
Radiated emission(3m)	±4.11dB
Radiated emission(10m)	±3.89dB

The measurement uncertainty will be considered, when test result margin to the limit.

3. Antenna Requirements

3.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

3.2 Antenna Construction and Directional Gain

Antenna Type: Chip Antenna
Antenna Gain: 2 dBi

4. Test of Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2009 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

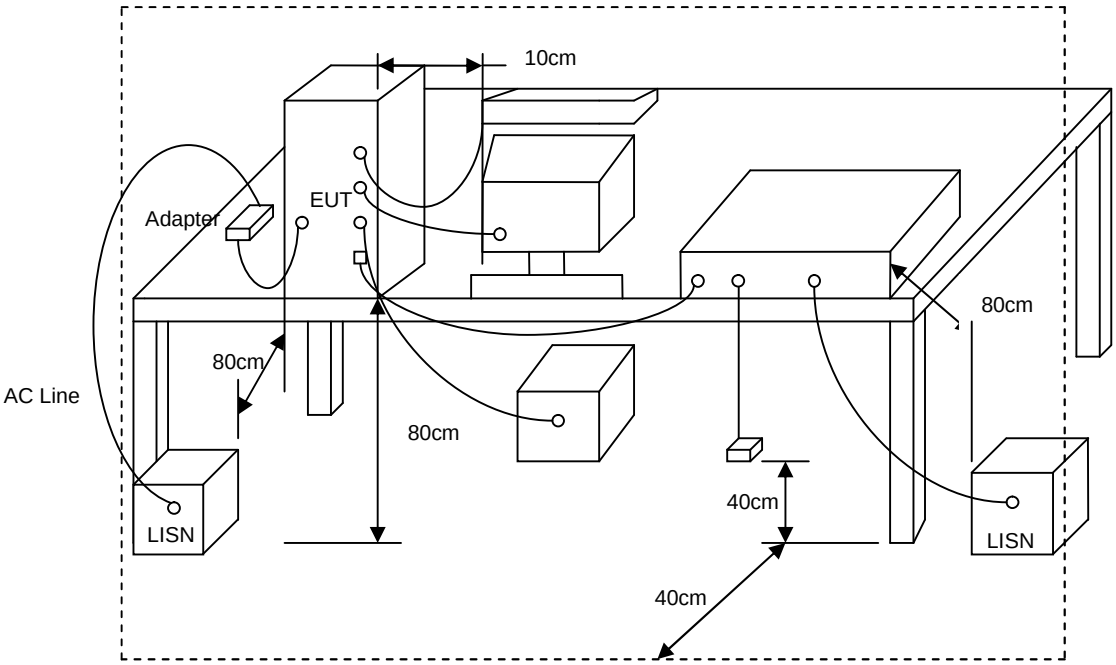
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

4.2 Test Procedures

a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3 Typical Test Setup



4.4 Test Result and Data

The EUT is powered from battery. This test item is not applicable.

5. Test of Radiated Emission

5.1 Test Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

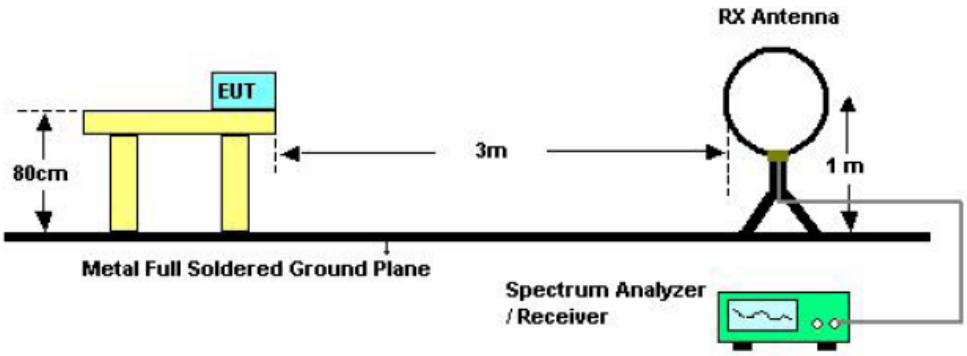
Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

5.2 Test Procedures

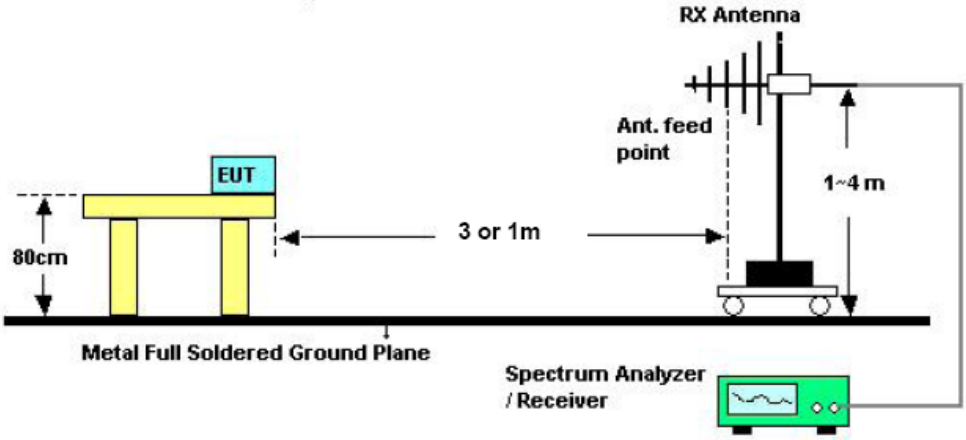
a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

5.3 Typical Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);
Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

5.4 Measurement Equipment

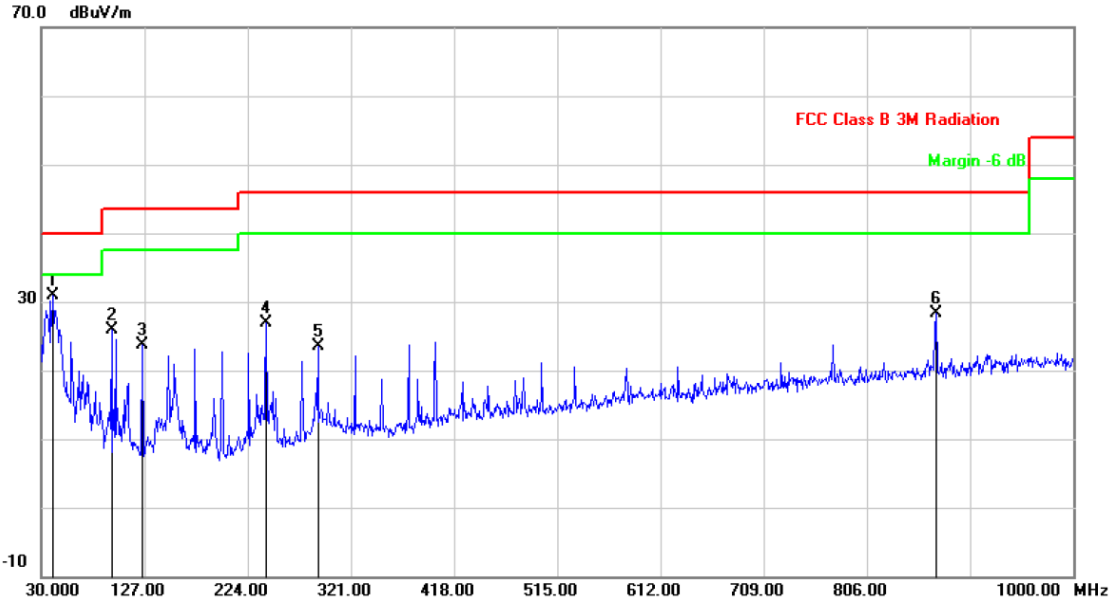
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Bilog Antenna	Sciences Corporation	JB1	A080713	2013/08/22	2014/08/21
Amplifier	AGILENT	8447D	2944A10531	2013/09/24	2014/09/23
EMI Receiver	R&S	ESCI	101200	2013/09/07	2014/09/06
SPECTRUM ANALYZER	R&S	FSP40	100219	2013/09/14	2014/09/13
HORN ANTENNA	EMCO	3115	31601	2013/09/18	2014/09/17
PREAMPLIFIER	AGILENT	8449B	3008A01954	2014/03/28	2015/03/27
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A

5.1 Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

5.2 Test Result and Data (30MHz ~ 1GHz)

Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11g, CH1	Temperature	:	24 °C
Test Date	:	May 28, 2014	Humidity	:	57 %
Memo	:		Atmospheric Pressure		1012 hpa



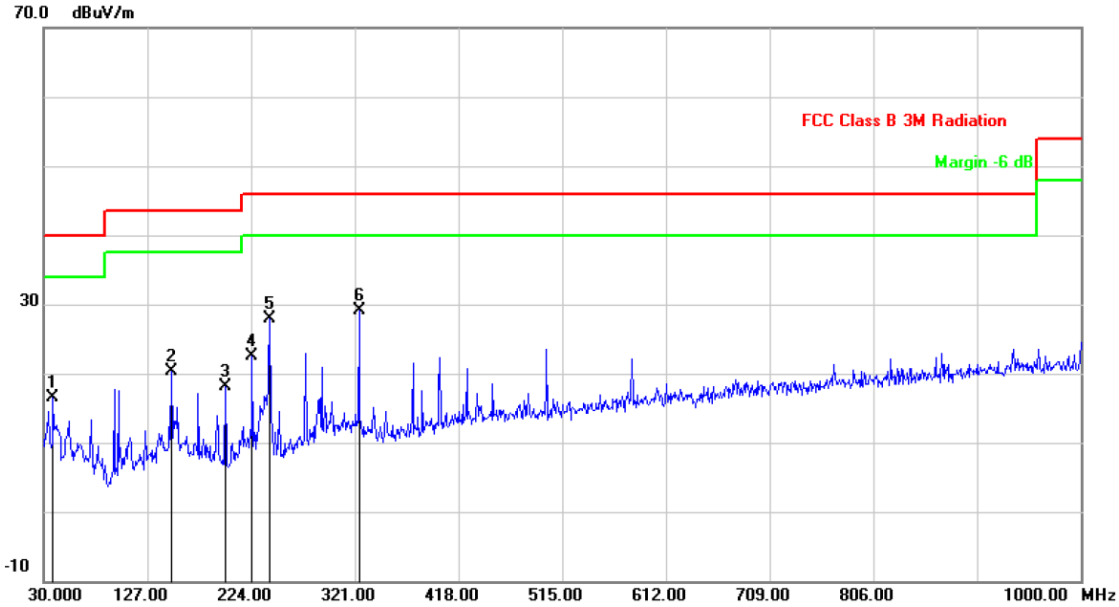
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	40.6700	-18.30	49.20	30.90	40.00	-9.10	peak	100	226
2	95.9600	-24.05	49.96	25.91	43.50	-17.59	peak	100	245
3	125.0600	-20.64	44.34	23.70	43.50	-19.80	peak	100	232
4	241.4600	-19.96	46.90	26.94	46.00	-19.06	peak	100	251
5	289.9600	-18.13	41.67	23.54	46.00	-22.46	peak	100	243
6	870.9900	-5.64	33.95	28.31	46.00	-17.69	peak	100	238

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11g, CH1	Temperature	:	24 °C
Test Date	:	May 28, 2014	Humidity	:	57 %
Memo	:		Atmospheric Pressure		1012 hpa



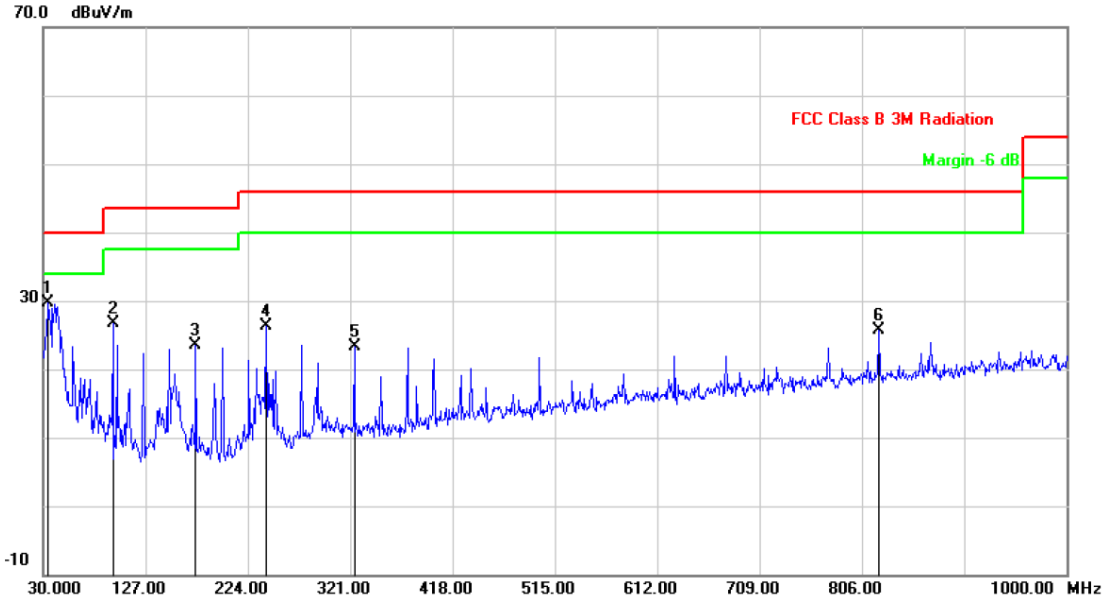
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	38.7300	-18.32	34.87	16.55	40.00	-23.45	peak	100	234
2	149.3100	-18.75	39.12	20.37	43.50	-23.13	peak	100	252
3	199.7500	-21.51	39.70	18.19	43.50	-25.31	peak	100	236
4	224.9700	-20.94	43.37	22.43	46.00	-23.57	peak	100	244
5	241.4600	-19.96	47.80	27.84	46.00	-18.16	peak	100	251
6	324.8800	-17.12	46.14	29.02	46.00	-16.98	peak	100	248

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 2	:	802.11n HT20, CH1	Temperature	:	24 °C
Test Date	:	May 28, 2014	Humidity	:	57 %
Memo	:		Atmospheric Pressure		1012 hpa



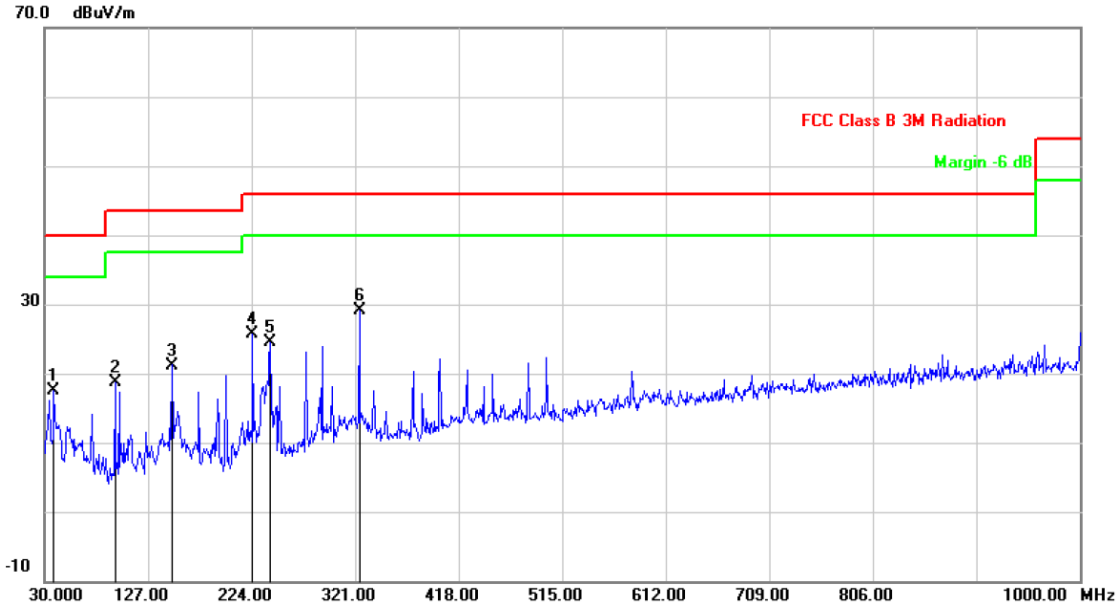
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	34.8500	-18.35	48.09	29.74	40.00	-10.26	peak	100	254
2	95.9600	-24.05	50.78	26.73	43.50	-16.77	peak	100	246
3	174.5300	-19.46	42.98	23.52	43.50	-19.98	peak	100	249
4	241.4600	-19.96	46.20	26.24	46.00	-19.76	peak	100	251
5	324.8800	-17.12	40.47	23.35	46.00	-22.65	peak	100	256
6	822.4900	-6.56	32.19	25.63	46.00	-20.37	peak	100	253

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 2	:	802.11n HT20, CH1	Temperature	:	24 °C
Test Date	:	May 28, 2014	Humidity	:	57 %
Memo	:		Atmospheric Pressure		1012 hpa



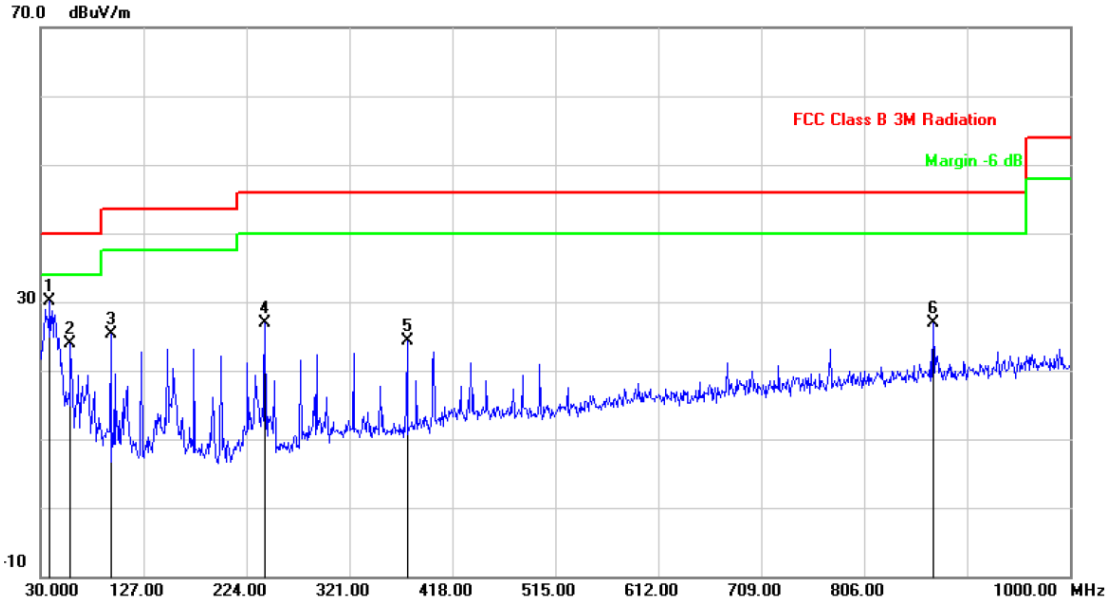
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	38.7300	-18.32	35.75	17.43	40.00	-22.57	peak	100	253
2	95.9600	-24.05	42.69	18.64	43.50	-24.86	peak	100	247
3	149.3100	-18.75	39.95	21.20	43.50	-22.30	peak	100	256
4	224.9700	-20.94	46.68	25.74	46.00	-20.26	peak	100	244
5	241.4600	-19.96	44.48	24.52	46.00	-21.48	peak	100	252
6	324.8800	-17.12	46.25	29.13	46.00	-16.87	peak	100	248

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 3	:	802.11n HT40, CH3	Temperature	:	24 °C
Test Date	:	May 28, 2014	Humidity	:	57 %
Memo	:		Atmospheric Pressure		1012 hpa



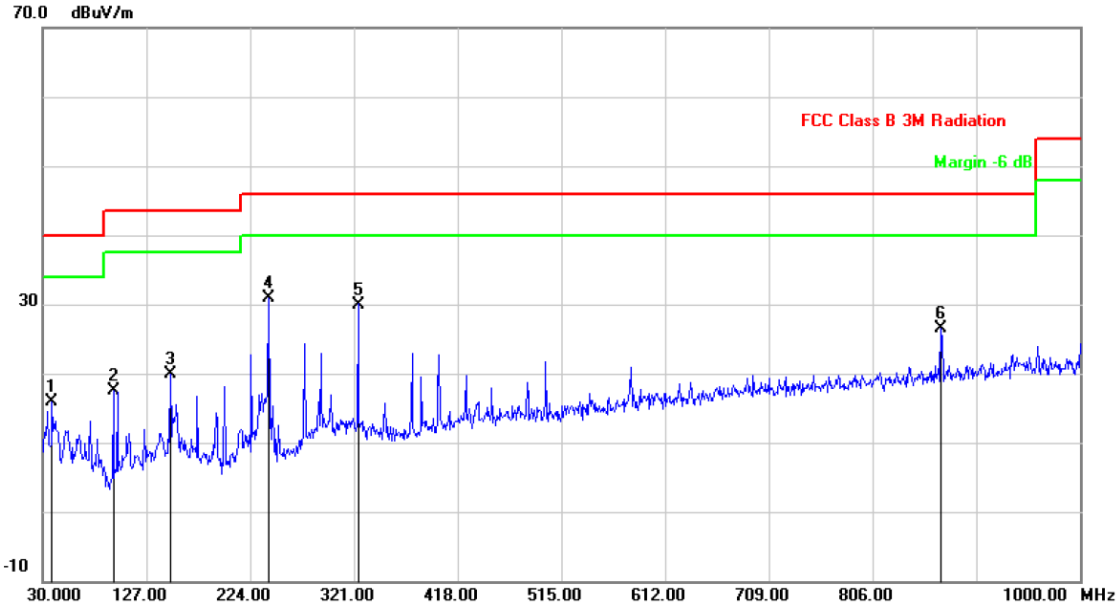
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	38.7300	-18.32	48.43	30.11	40.00	-9.89	peak	100	211
2	58.1300	-18.47	42.47	24.00	40.00	-16.00	peak	100	179
3	95.9600	-24.05	49.44	25.39	43.50	-18.11	peak	100	224
4	241.4600	-19.96	46.83	26.87	46.00	-19.13	peak	100	188
5	375.3200	-15.71	39.93	24.22	46.00	-21.78	peak	100	235
6	870.9900	-5.64	32.46	26.82	46.00	-19.18	peak	100	182

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 3	:	802.11n HT40, CH3	Temperature	:	24 °C
Test Date	:	May 28, 2014	Humidity	:	57 %
Memo	:		Atmospheric Pressure		1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	38.7300	-18.32	34.26	15.94	40.00	-24.06	peak	100	243
2	95.9600	-24.05	41.51	17.46	43.50	-26.04	peak	100	252
3	149.3100	-18.75	38.68	19.93	43.50	-23.57	peak	100	237
4	241.4600	-19.96	50.91	30.95	46.00	-15.05	peak	100	245
5	324.8800	-17.12	47.12	30.00	46.00	-16.00	peak	100	246
6	870.0200	-5.66	32.23	26.57	46.00	-19.43	peak	100	251

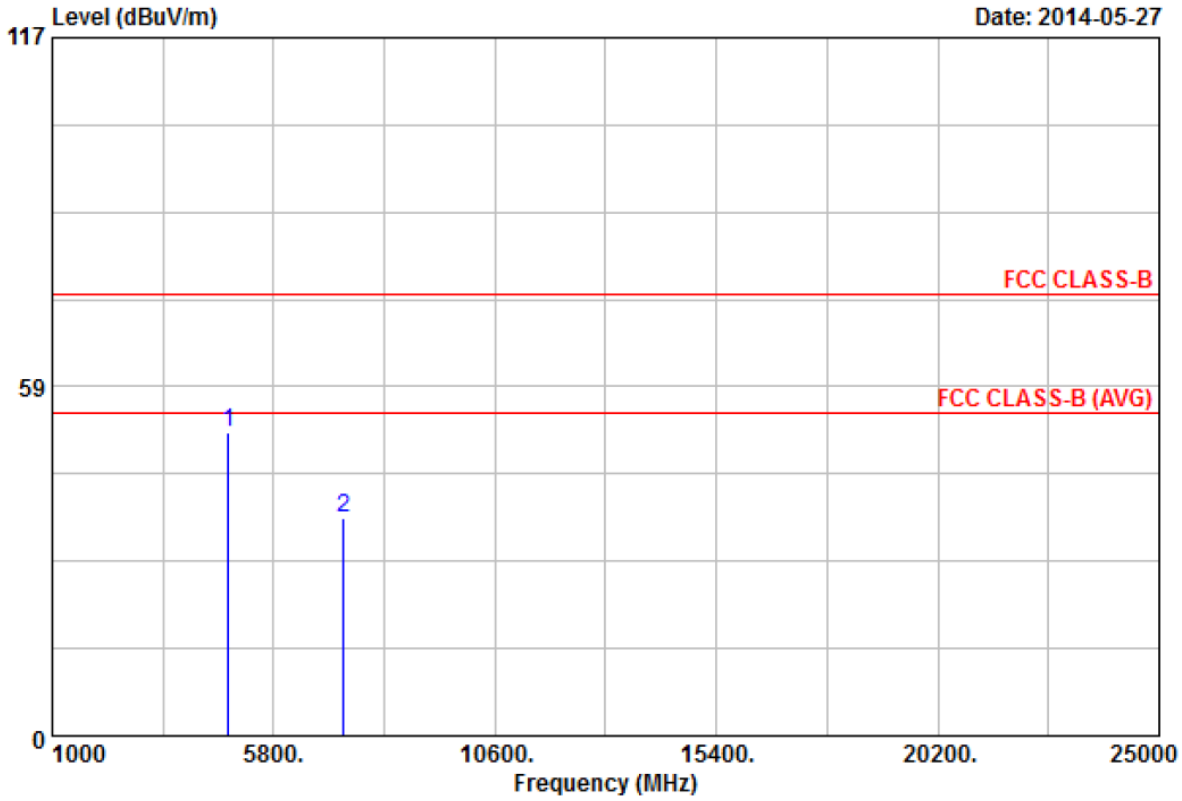
Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

5.3 Test Result and Data (Above 1GHz)

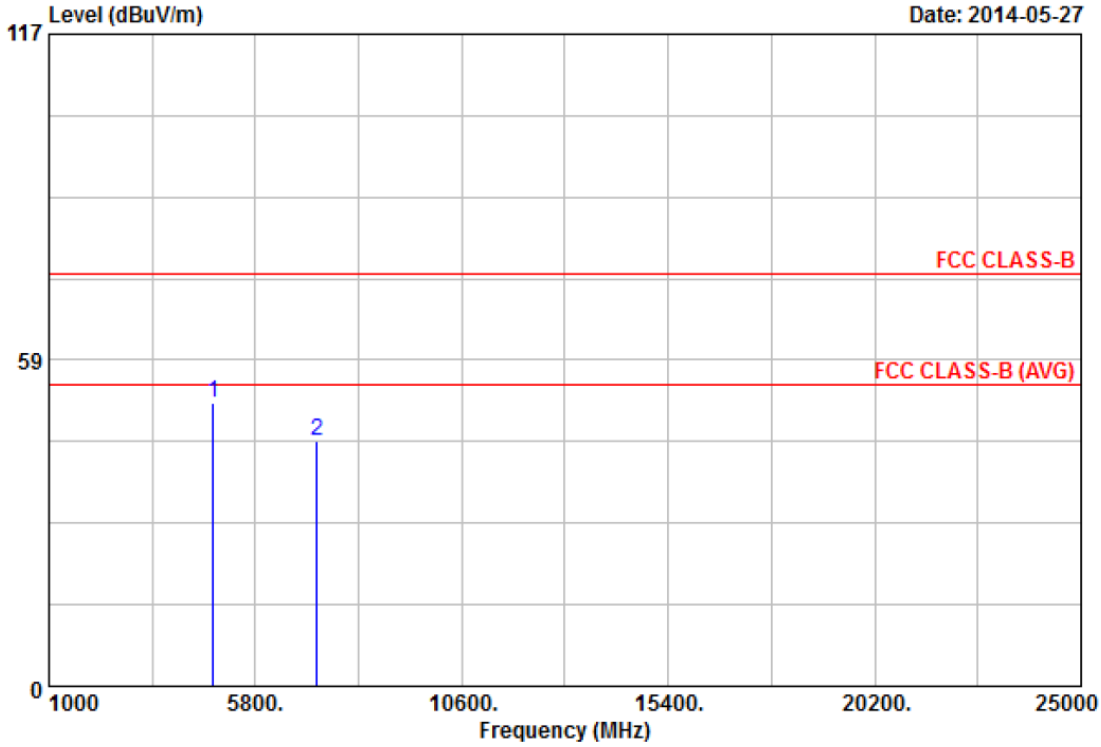
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11b, CH1	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4824.00	41.28	9.44	50.72	74.00	-23.28	Peak	100	208
2	7326.00	24.79	11.70	36.49	74.00	-37.51	Peak	100	208

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

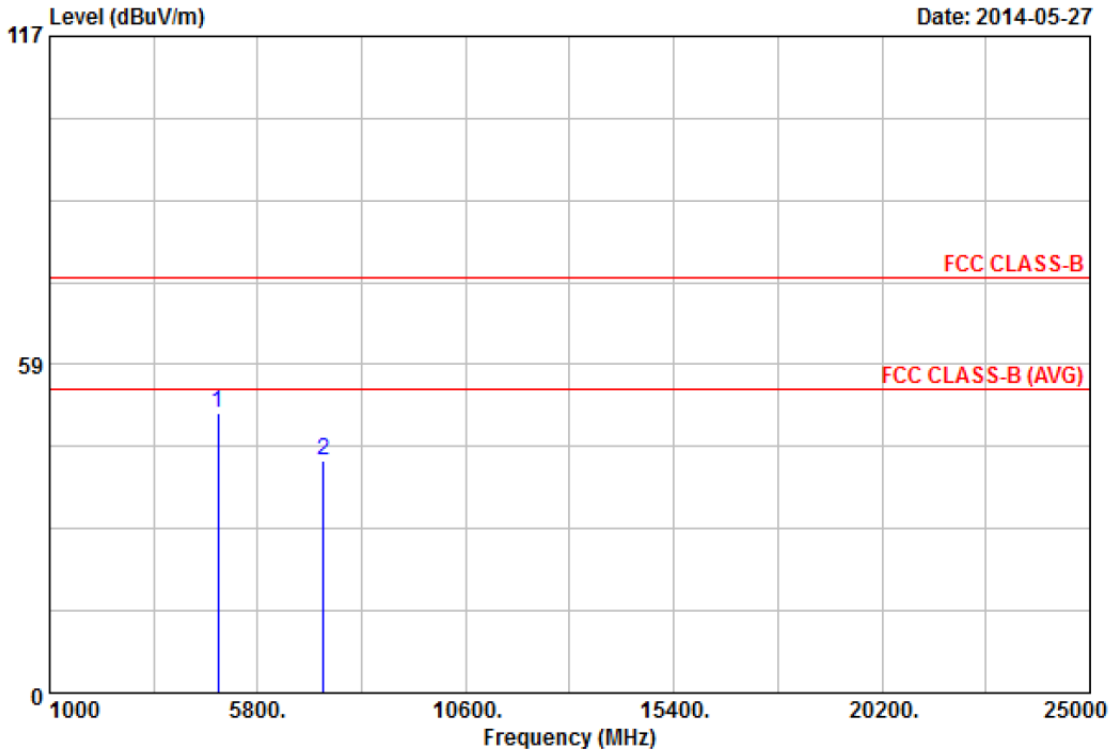
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11b, CH1	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4824.00	41.46	9.44	50.90	74.00	-23.10	Peak	100	225
2	7236.00	32.60	11.56	44.16	74.00	-29.84	Peak	100	225

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

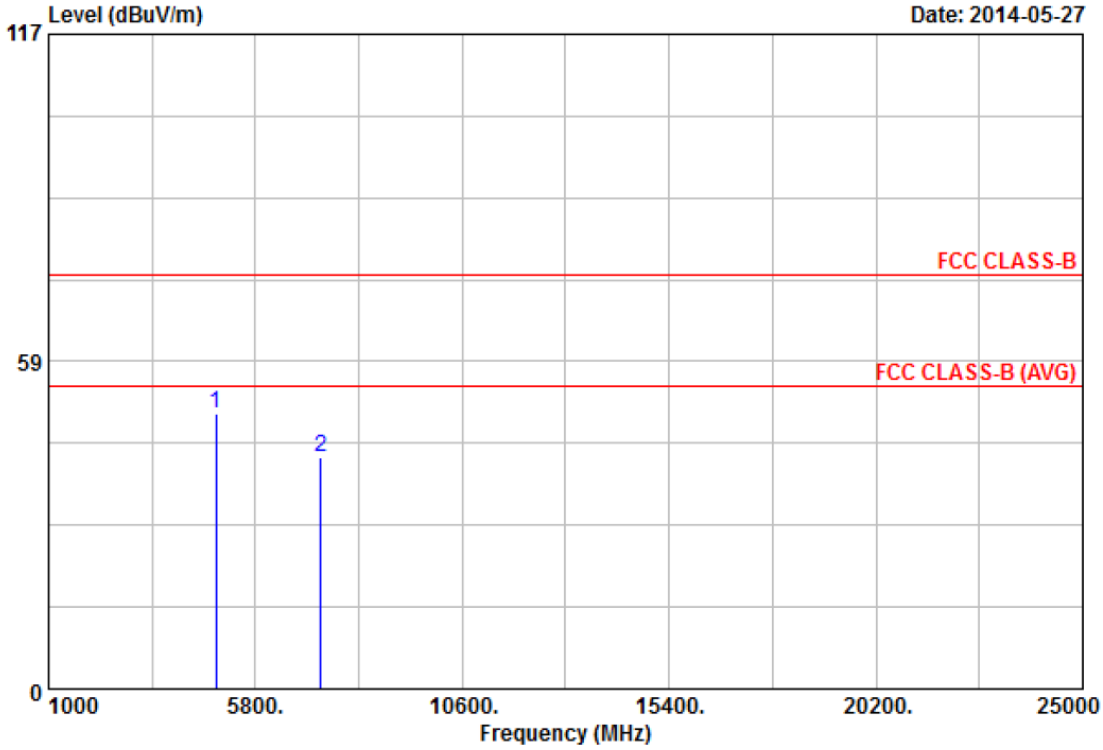
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11b, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	40.52	9.49	50.01	74.00	-23.99	Peak	100	166
2	7311.00	29.67	11.68	41.35	74.00	-32.65	Peak	100	166

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

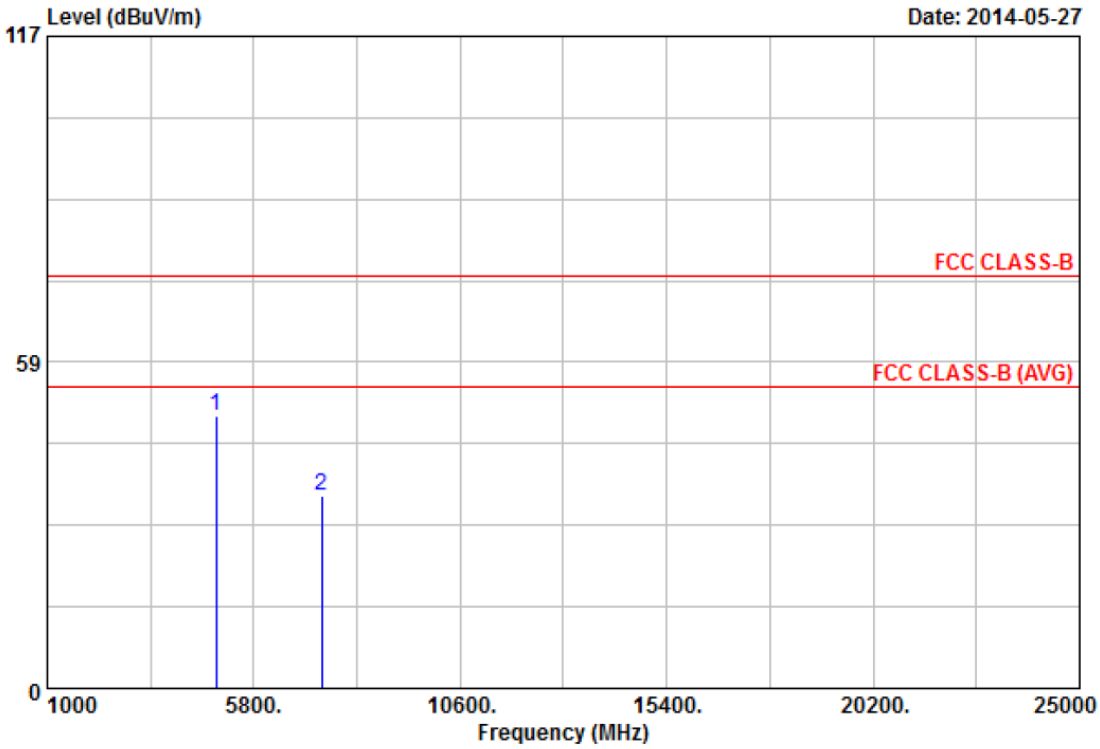
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11b, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	39.77	9.49	49.26	74.00	-24.74	Peak	100	213
2	7311.00	29.64	11.68	41.32	74.00	-32.68	Peak	100	213

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

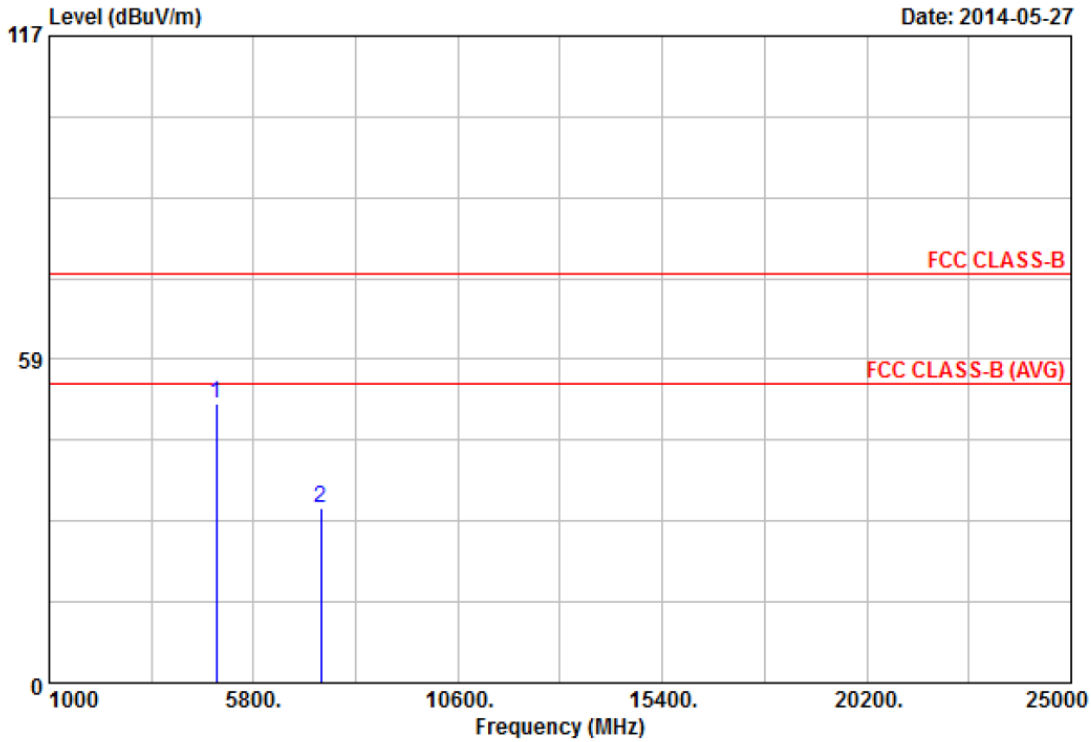
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11b, CH11	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4924.00	39.28	9.55	48.83	74.00	-25.17	Peak	100	172
2	7386.00	22.65	11.79	34.44	74.00	-39.56	Peak	100	172

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

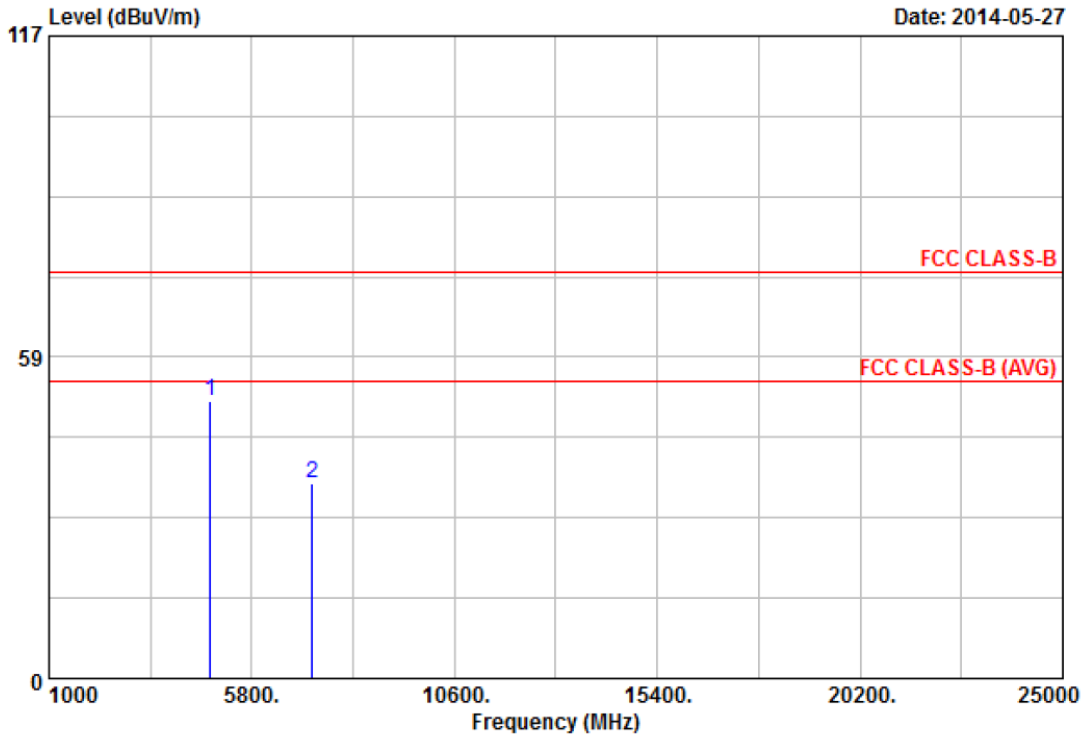
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11b, CH11	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4924.00	41.11	9.55	50.66	74.00	-23.34	Peak	100	210
2	7386.00	19.76	11.79	31.55	74.00	-42.45	Peak	100	210

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

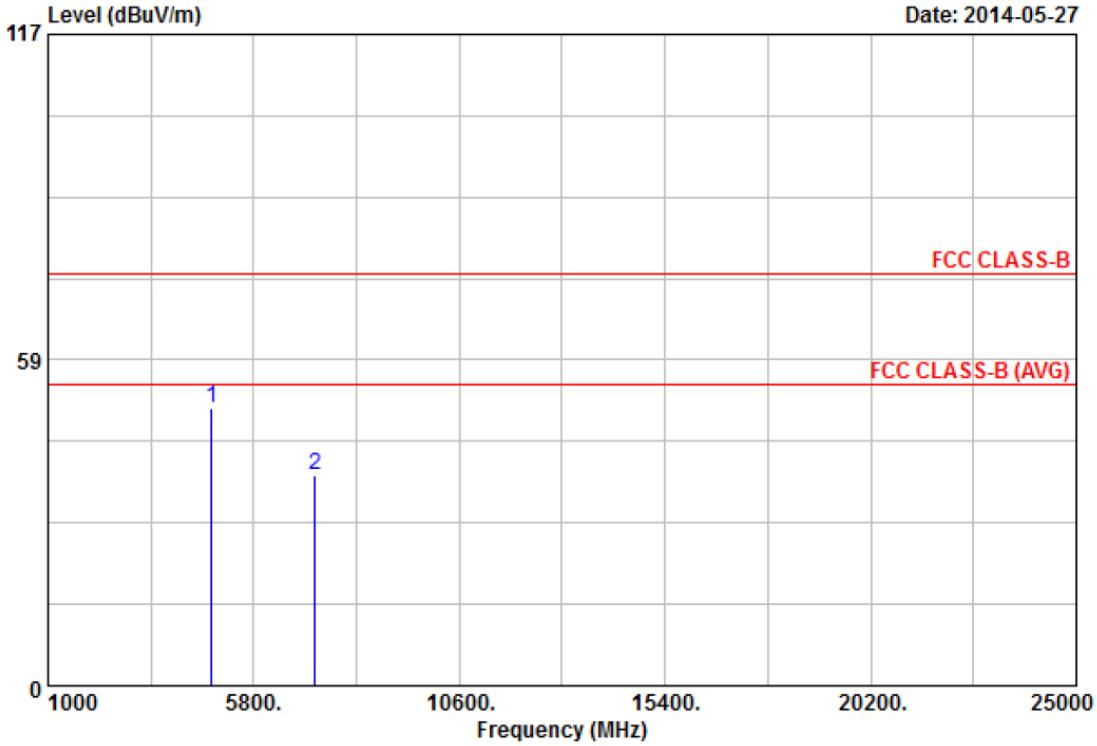
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11g, CH1	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4824.00	41.02	9.44	50.46	74.00	-23.54	Peak	100	168
2	7236.00	24.12	11.56	35.68	74.00	-38.32	Peak	100	168

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

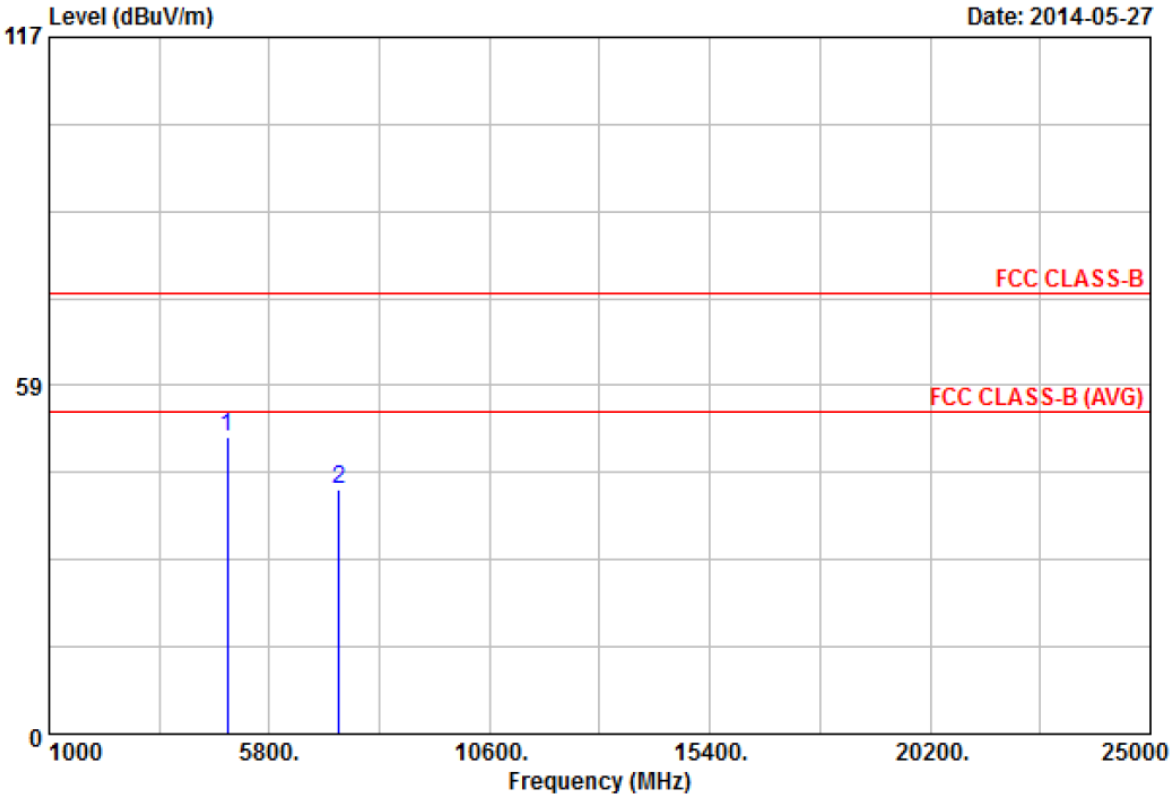
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11g, CH1	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4824.00	40.57	9.44	50.01	74.00	-23.99	Peak	100	222
2	7236.00	26.31	11.56	37.87	74.00	-36.13	Peak	100	222

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

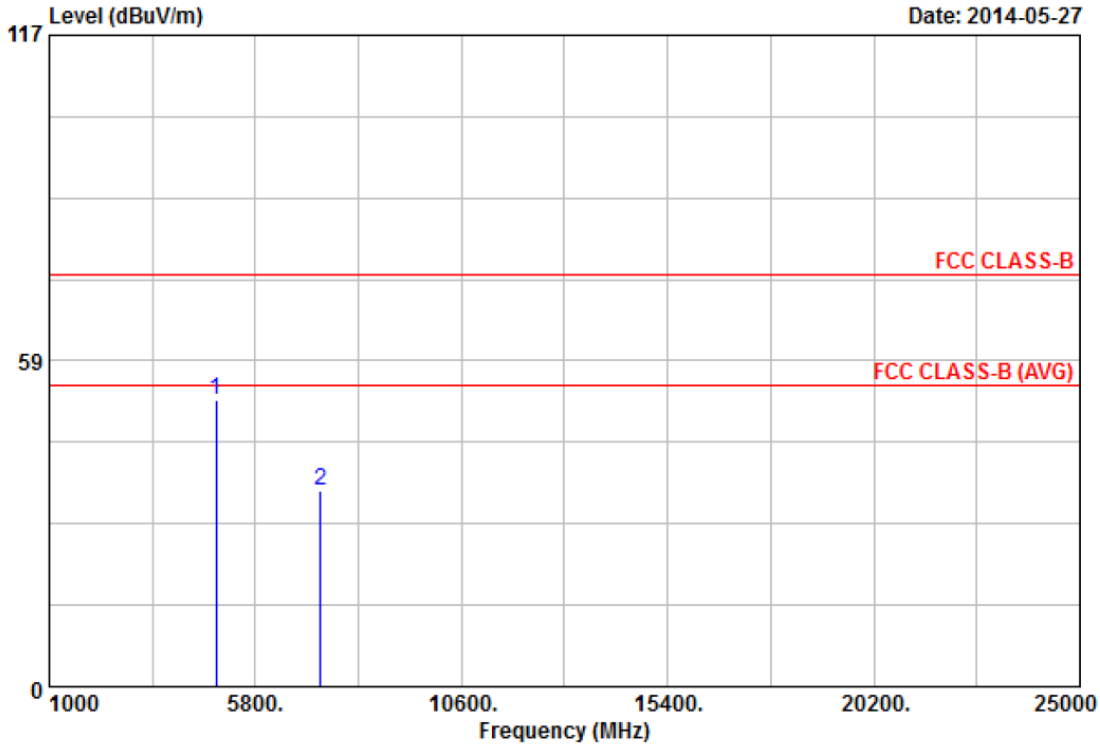
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11g, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	40.36	9.49	49.85	74.00	-24.15	Peak	100	170
2	7311.00	29.41	11.68	41.09	74.00	-32.91	Peak	100	170

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

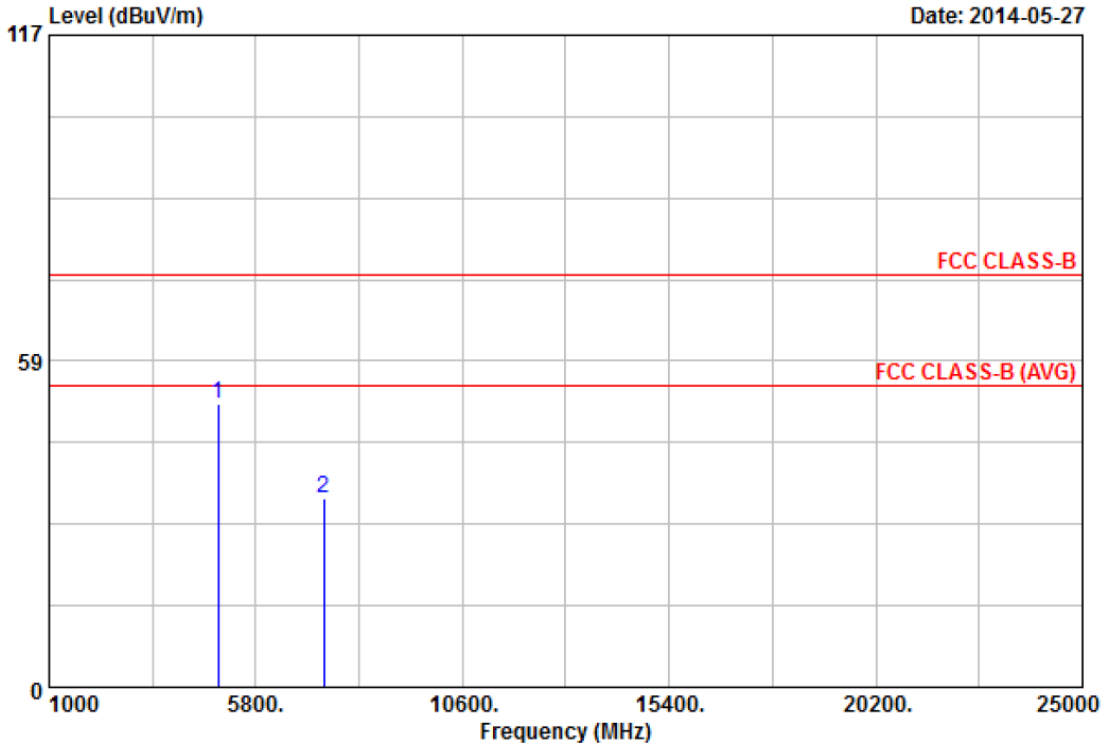
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11g, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	41.91	9.49	51.40	74.00	-22.60	Peak	100	231
2	7311.00	23.57	11.68	35.25	74.00	-38.75	Peak	100	231

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

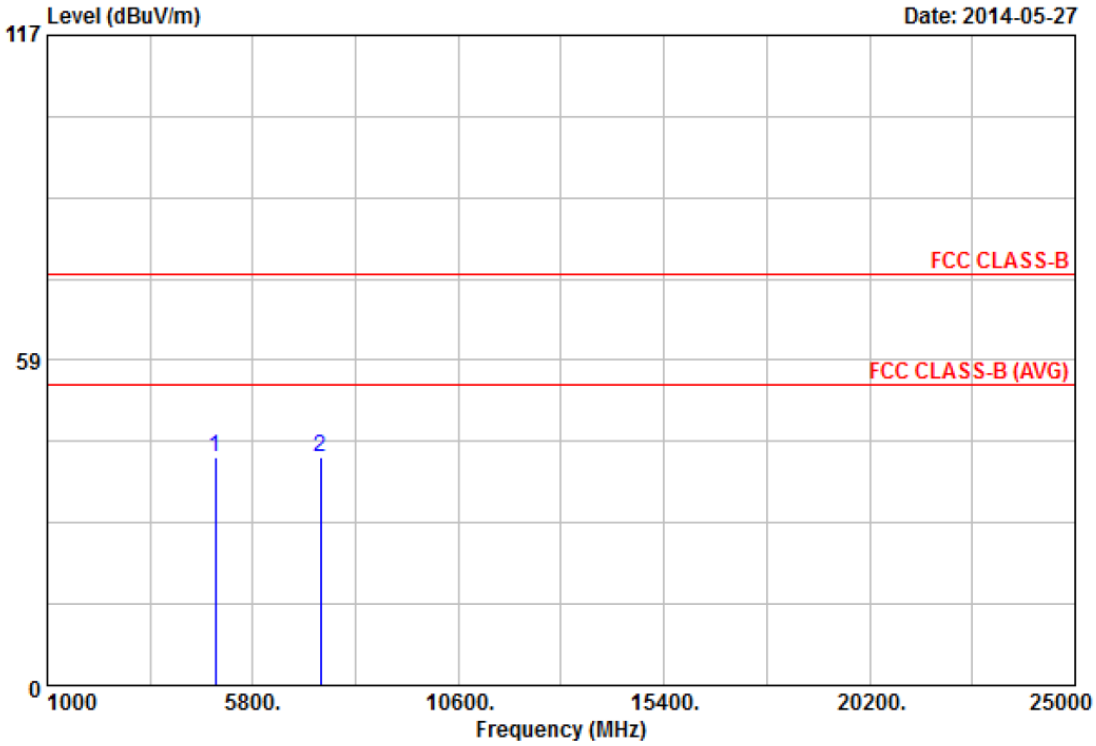
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 1	:	802.11g, CH11	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4924.00	41.17	9.55	50.72	74.00	-23.28	Peak	100	158
2	7386.00	22.00	11.79	33.79	74.00	-40.21	Peak	100	158

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

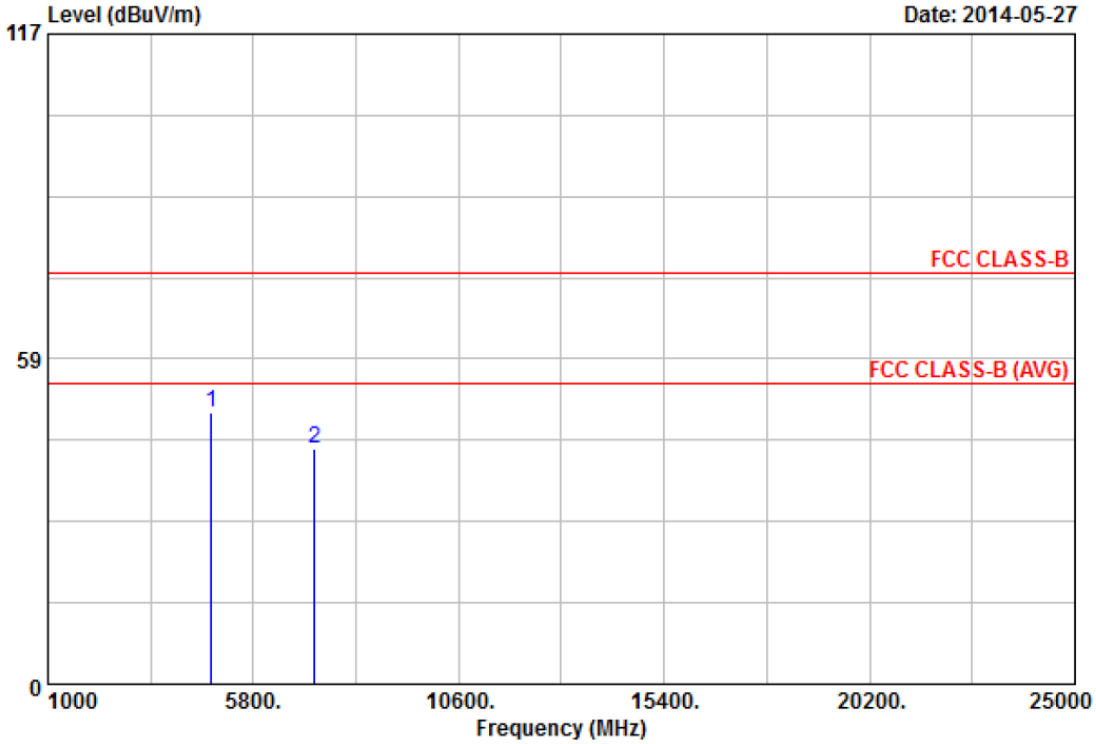
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	802.11g, CH11	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4924.00	31.57	9.55	41.12	74.00	-32.88	Peak	100	207
2	7386.00	29.33	11.79	41.12	74.00	-32.88	Peak	100	207

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

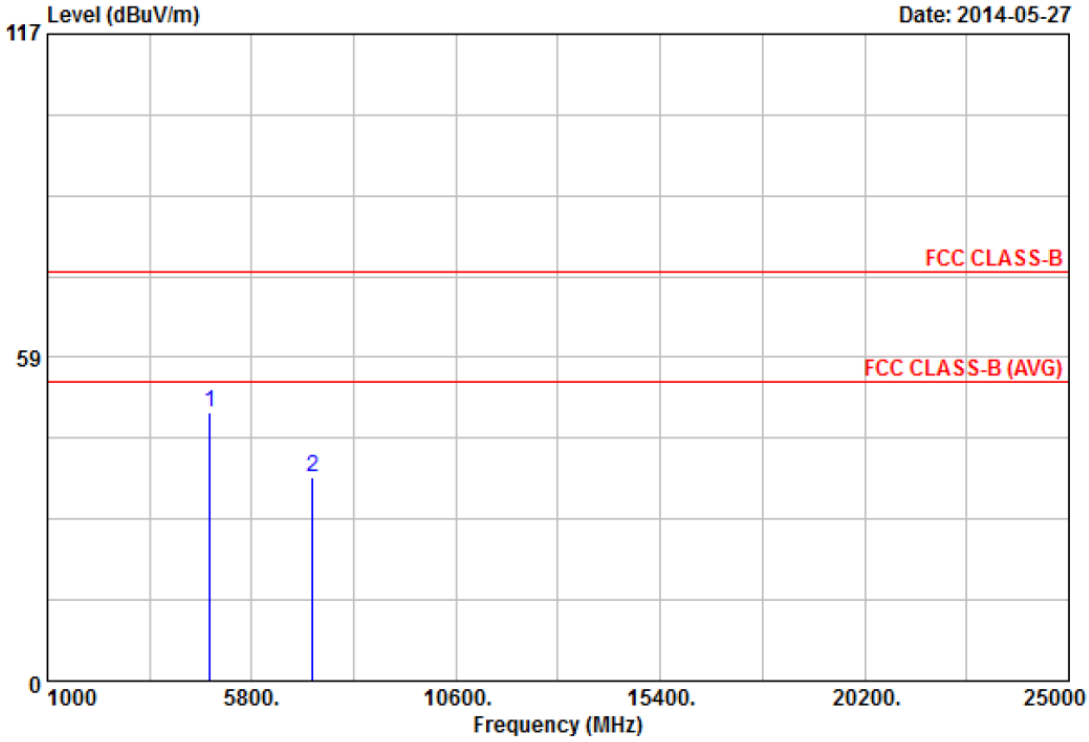
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 2	:	802.11n HT20, CH1	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4824.00	39.29	9.44	48.73	74.00	-25.27	Peak	100	169
2	7236.00	30.73	11.56	42.29	74.00	-31.71	Peak	100	1696

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

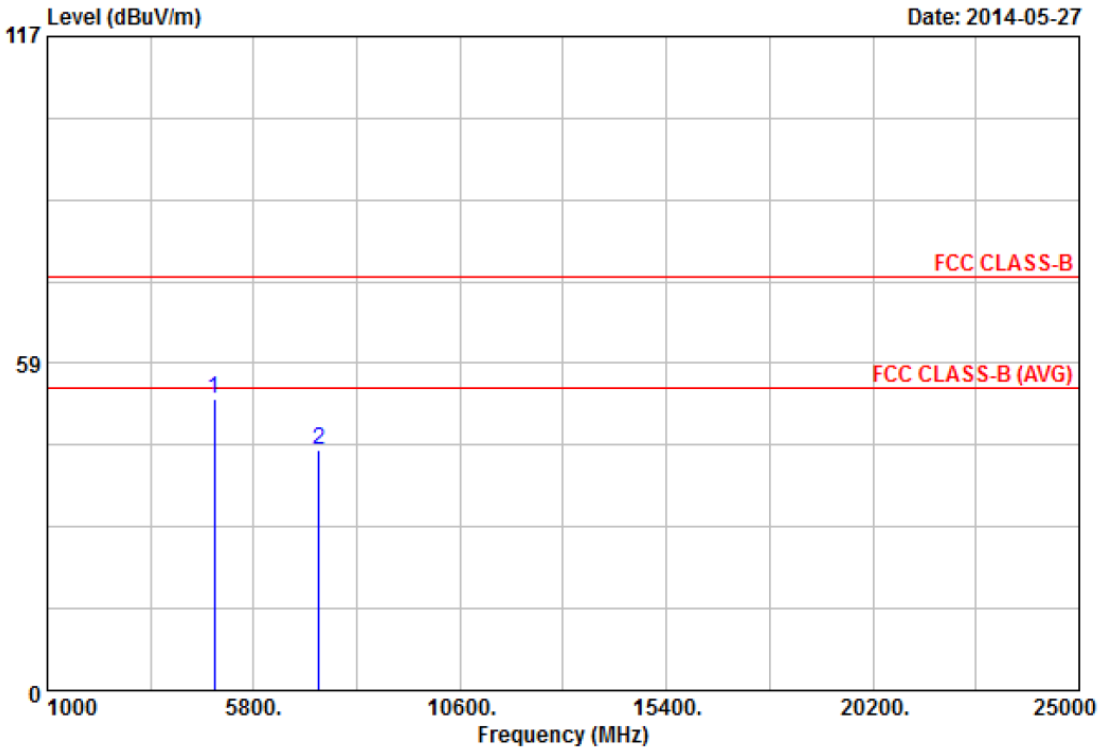
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 2	:	802.11n HT20, CH1	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4824.00	39.11	9.44	48.55	74.00	-25.45	Peak	100	173
2	7236.00	25.25	11.56	36.81	74.00	-37.19	Peak	100	173

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

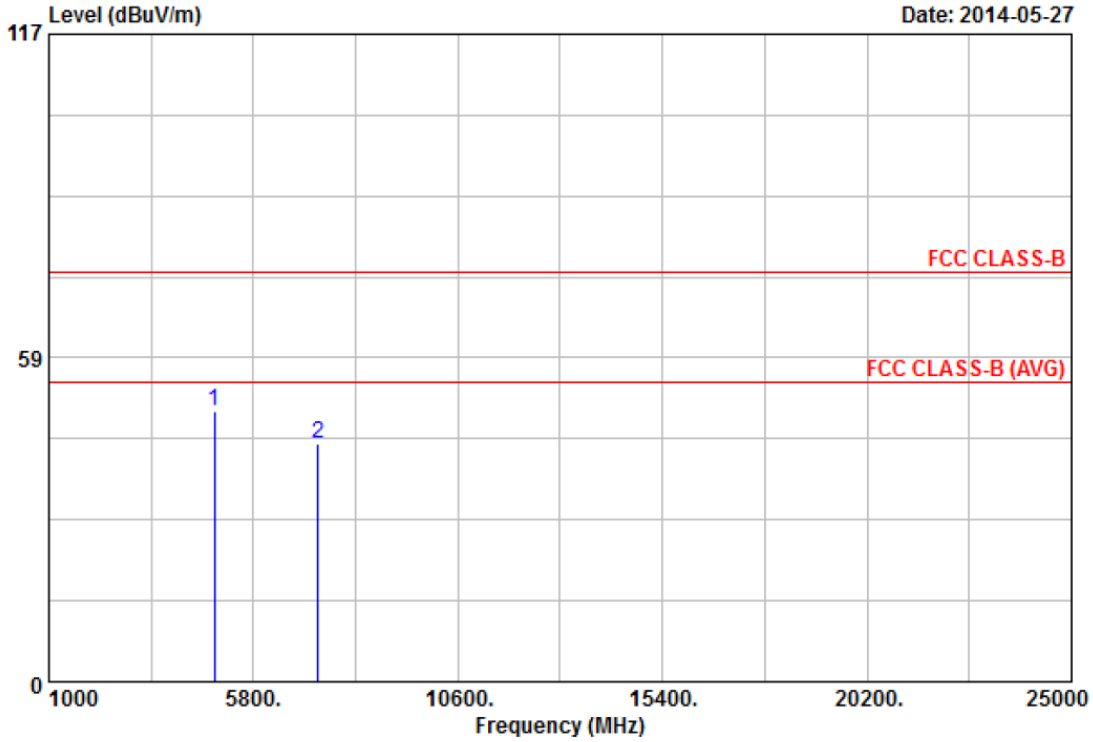
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 2	:	802.11n HT20, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	42.69	9.49	52.18	74.00	-21.82	Peak	100	173
2	7311.00	31.50	11.68	43.18	74.00	-30.82	Peak	100	173

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

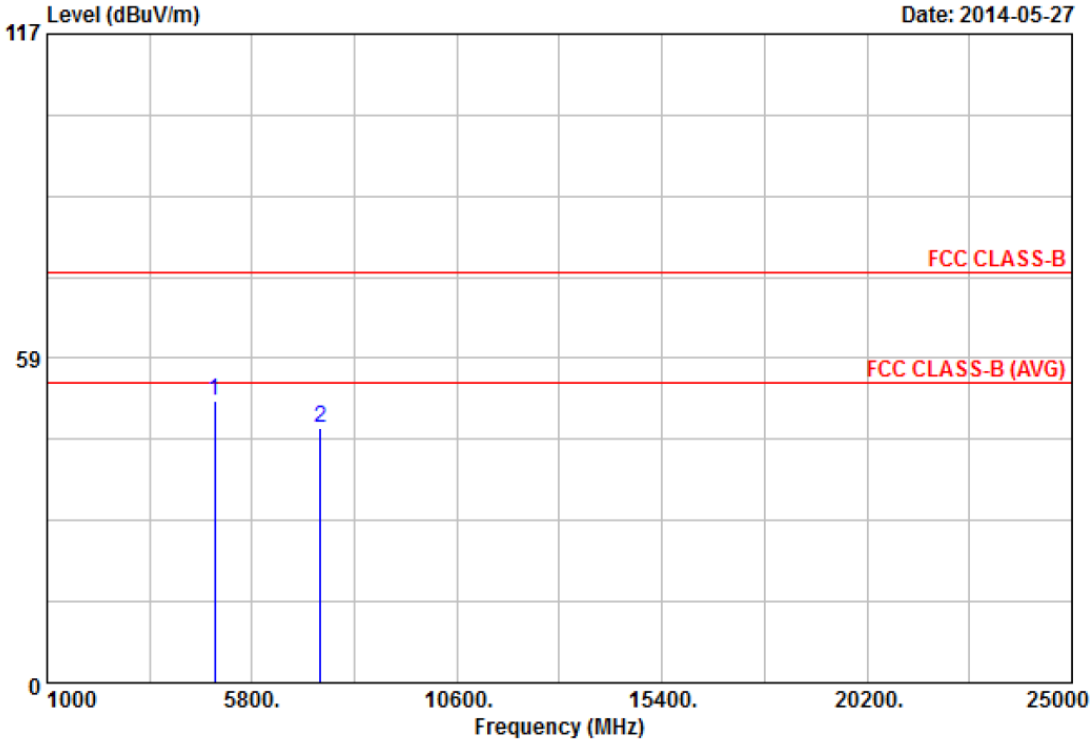
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 2	:	802.11n HT20, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	39.28	9.49	48.77	74.00	-25.23	Peak	100	166
2	7307.00	31.21	11.67	42.88	74.00	-31.12	Peak	100	166

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

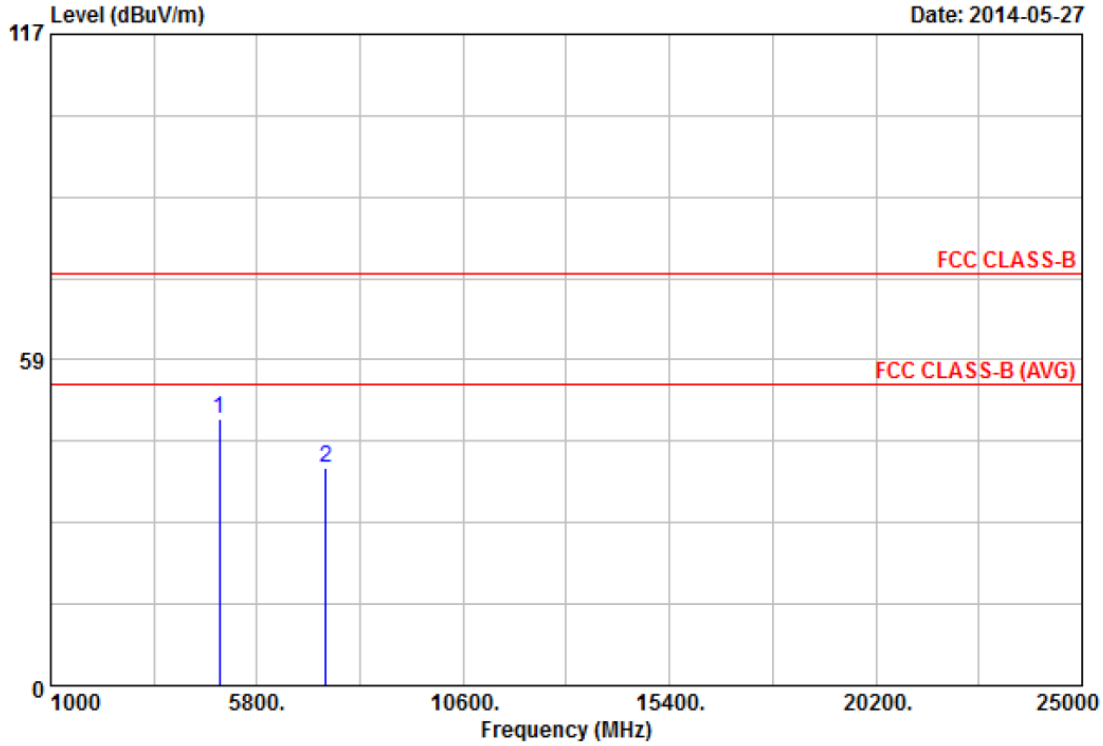
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 2	:	802.11n HT20, CH11	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4924.00	41.34	9.55	50.89	74.00	-23.11	Peak	100	167
2	7396.00	34.01	11.81	45.82	74.00	-28.18	Peak	100	215

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

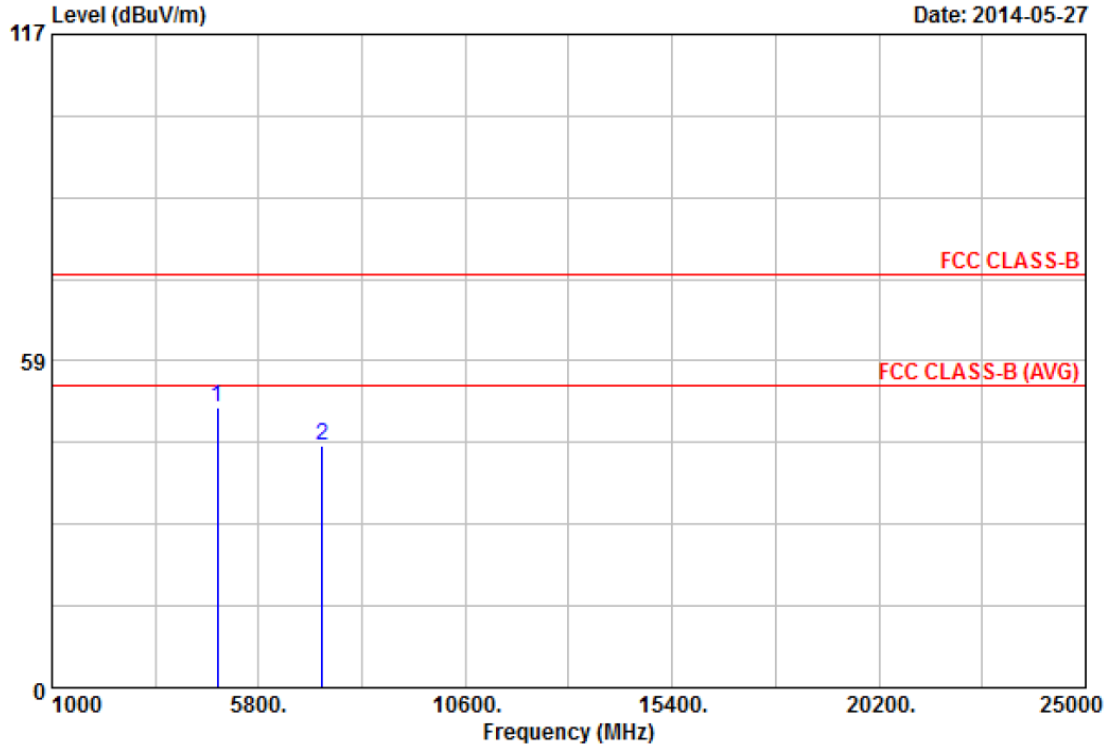
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 2	:	802.11n HT20, CH11	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4924.00	38.21	9.55	47.76	74.00	-26.24	Peak	100	175
2	7396.00	27.42	11.81	39.23	74.00	-34.77	Peak	100	175

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

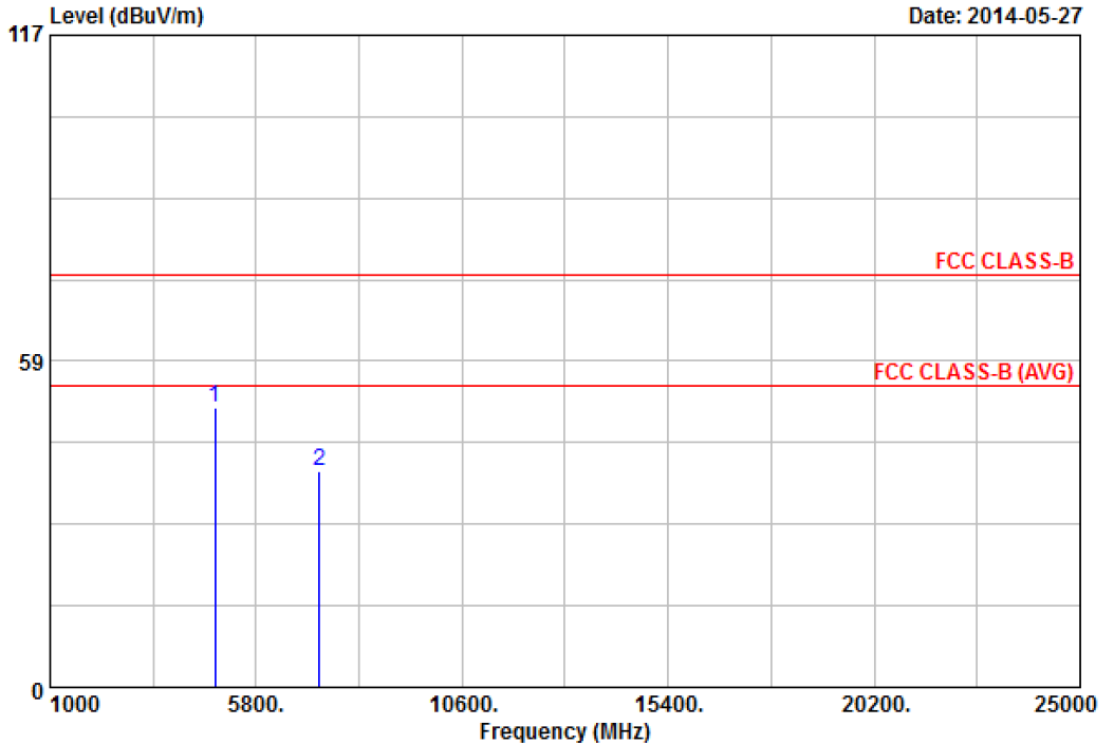
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 3	:	802.11n HT40, CH3	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4844.00	40.60	9.46	50.06	74.00	-23.94	Peak	100	163
2	7266.00	31.88	11.61	43.49	74.00	-30.51	Peak	100	163

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

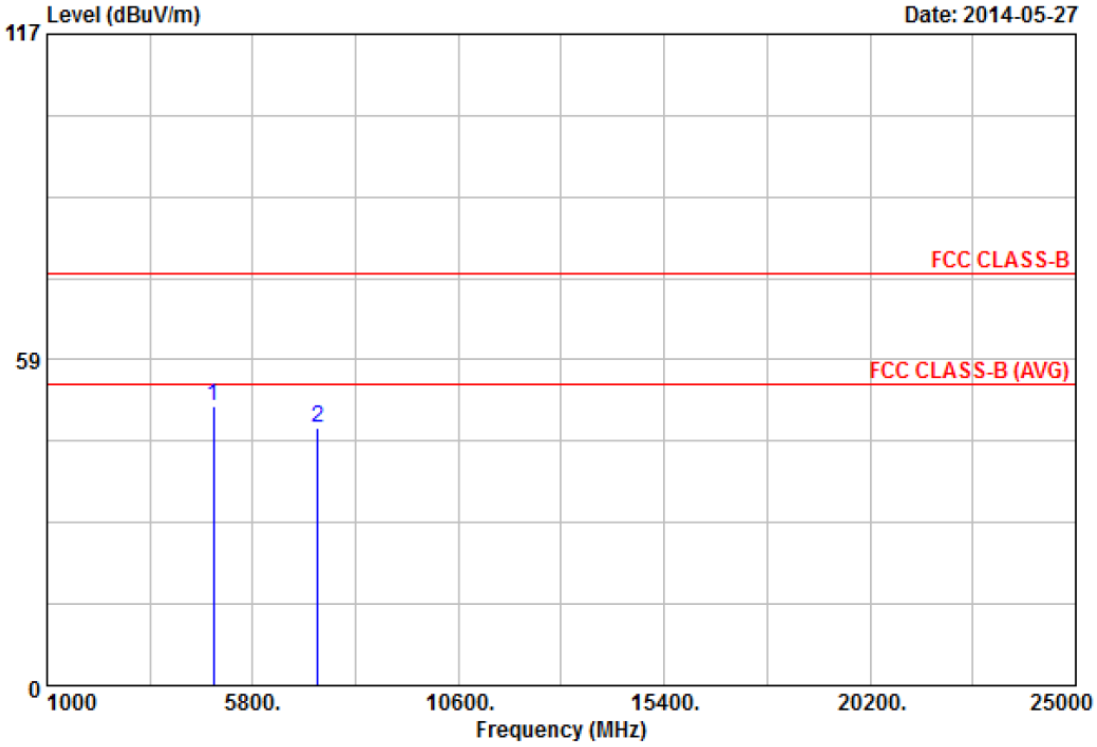
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 3	:	802.11n HT40, CH3	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4844.00	40.88	9.46	50.34	74.00	-23.66	Peak	100	209
2	7266.00	27.29	11.61	38.90	74.00	-35.10	Peak	100	209

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

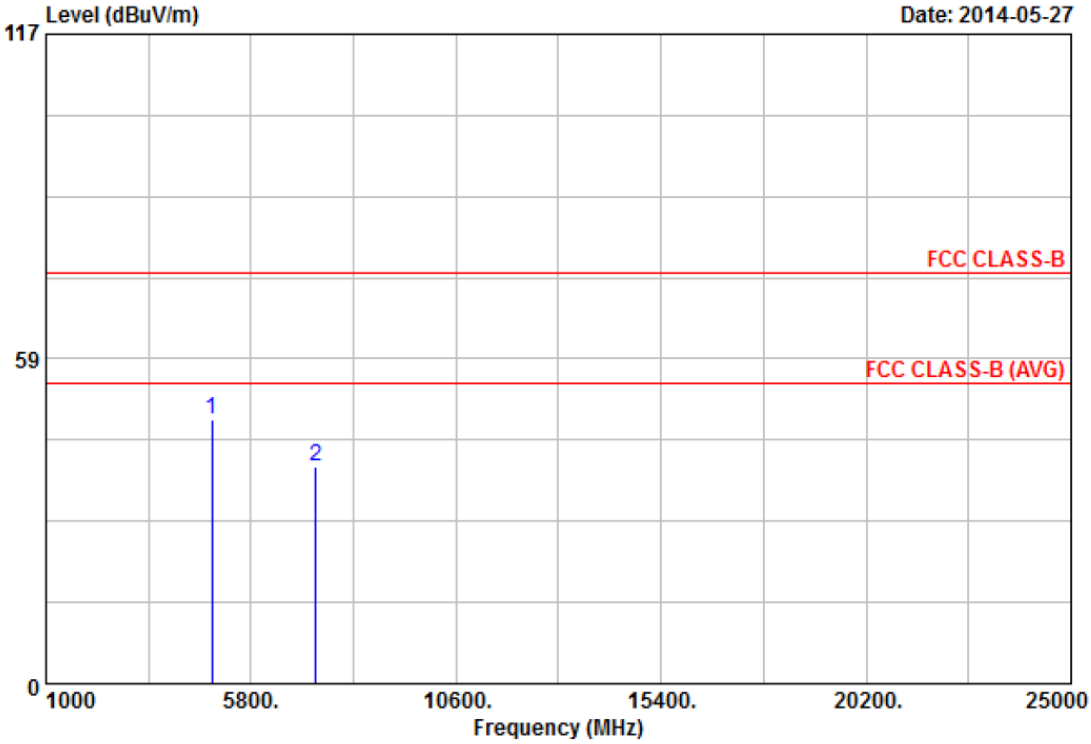
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 3	:	802.11n HT40, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	40.62	9.49	50.11	74.00	-23.89	Peak	100	171
2	7311.00	34.70	11.68	46.38	74.00	-27.62	Peak	100	171

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

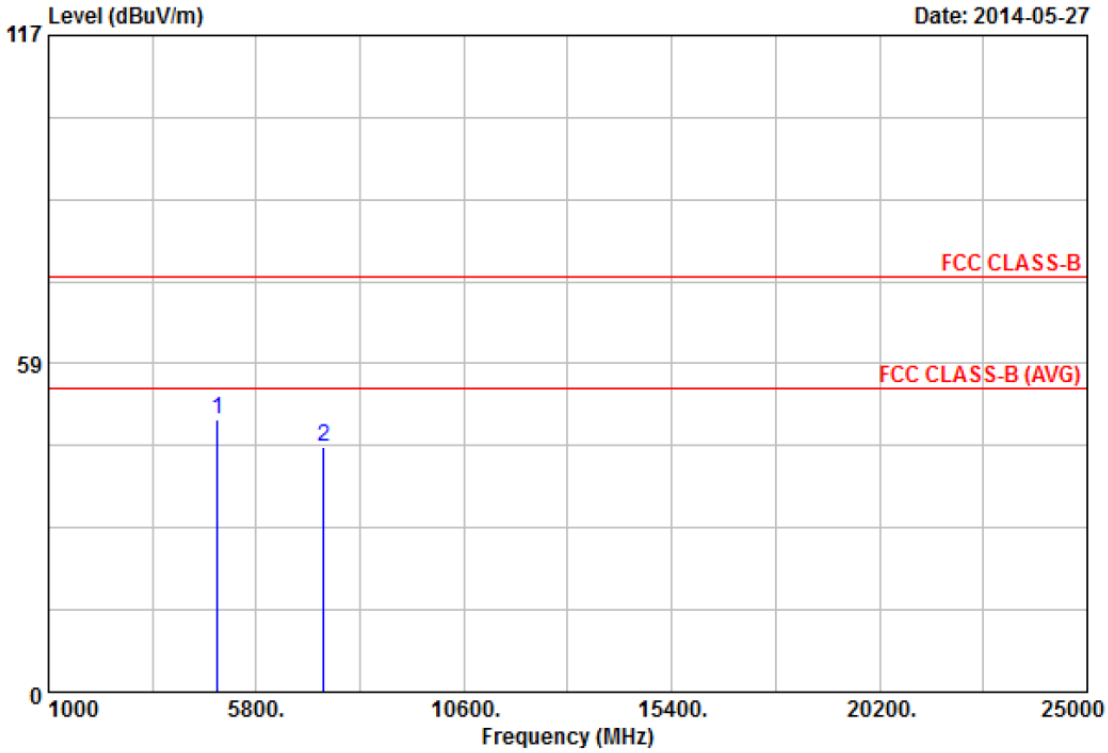
Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 3	:	802.11n HT40, CH6	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4874.00	38.09	9.49	47.58	74.00	-26.42	Peak	100	206
2	7311.00	27.53	11.68	39.21	74.00	-34.79	Peak	100	206

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

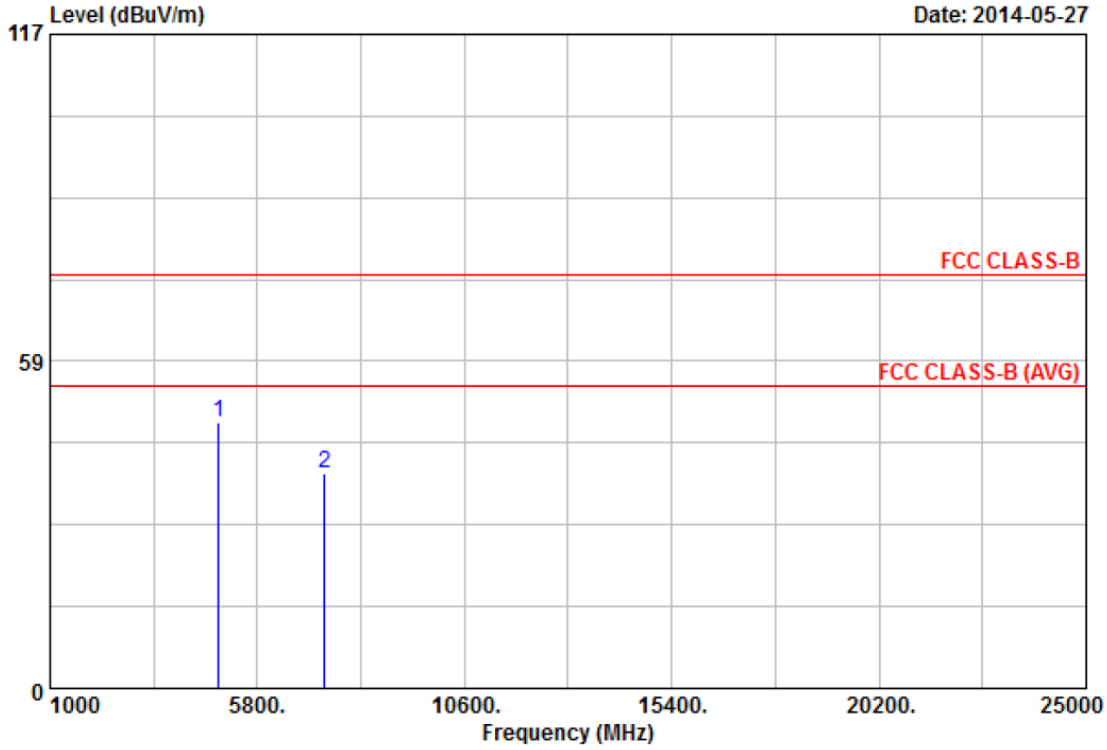
Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode 3	:	802.11n HT40, CH9	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4904.00	39.13	9.53	48.66	74.00	-25.34	Peak	100	174
2	7356.00	32.03	11.75	43.78	74.00	-30.22	Peak	100	174

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

Power	:	DC 5V	Pol/Phase	:	HORIZONTAL
Test Mode 3	:	802.11n HT40, CH9	Temperature	:	22 °C
Test Date	:	May 27, 2014	Humidity	:	55 %
Memo	:		Atmospheric Pressure	:	1015 hpa



Item	Freq	Read Value	facter	result	limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4904.00	38.07	9.53	47.60	74.00	-26.40	Peak	100	204
2	7356.00	26.87	11.75	38.62	74.00	-35.38	Peak	100	204

Remarks: 1. Result = Read Value + Factor
2. Factor = Antenna factor + Cable loss - Amplifier factor

6. 6dB Bandwidth Measurement Data

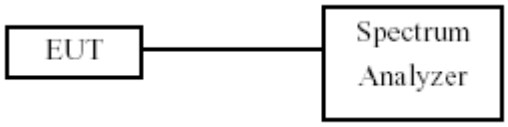
6.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

6.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 1~5% of the emission bandwidth and VBW ≥ 3x RBW.
c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
d. The 6dB Bandwidth was measured and recorded.

6.3 Test Setup Layout



6.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2014/03/27	2015/03/26

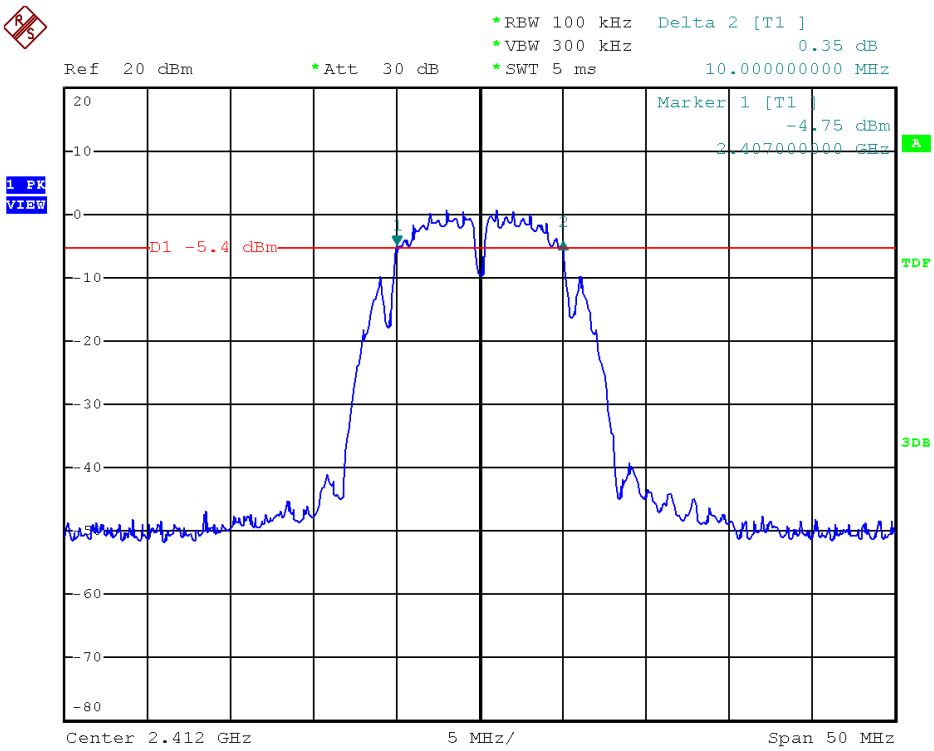
6.5 Test Result and Data

Test Date: May 27, 2014 Temperature: 22℃

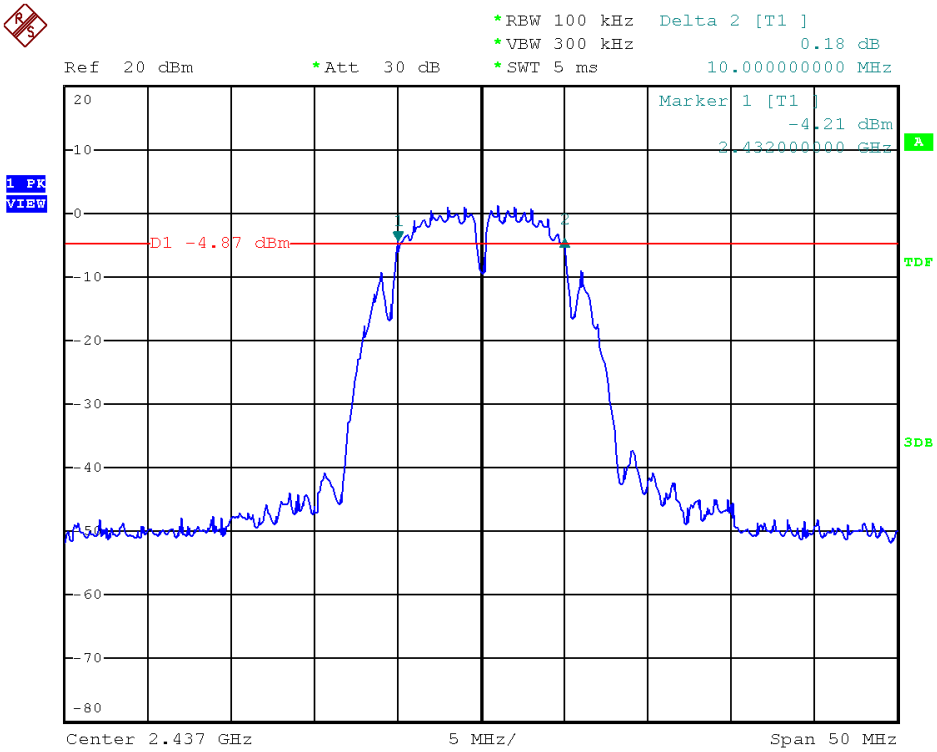
Atmospheric pressure: 1015 hPa Humidity: 55%

Modulation Standard	Channel	Frequency (MHz)	6dB Bandwidth (MHz)
802.11b (1Mbps)	01	2412	10
	06	2437	10
	11	2462	10
802.11g (6Mbps)	01	2412	16.6
	06	2437	16.6
	11	2462	16.6
802.11n HT20 (6.5Mbps)	01	2412	17.8
	06	2437	17.8
	11	2462	17.8
802.11n HT40 (13.5Mbps)	03	2422	36.6
	06	2437	36.6
	09	2452	36.6

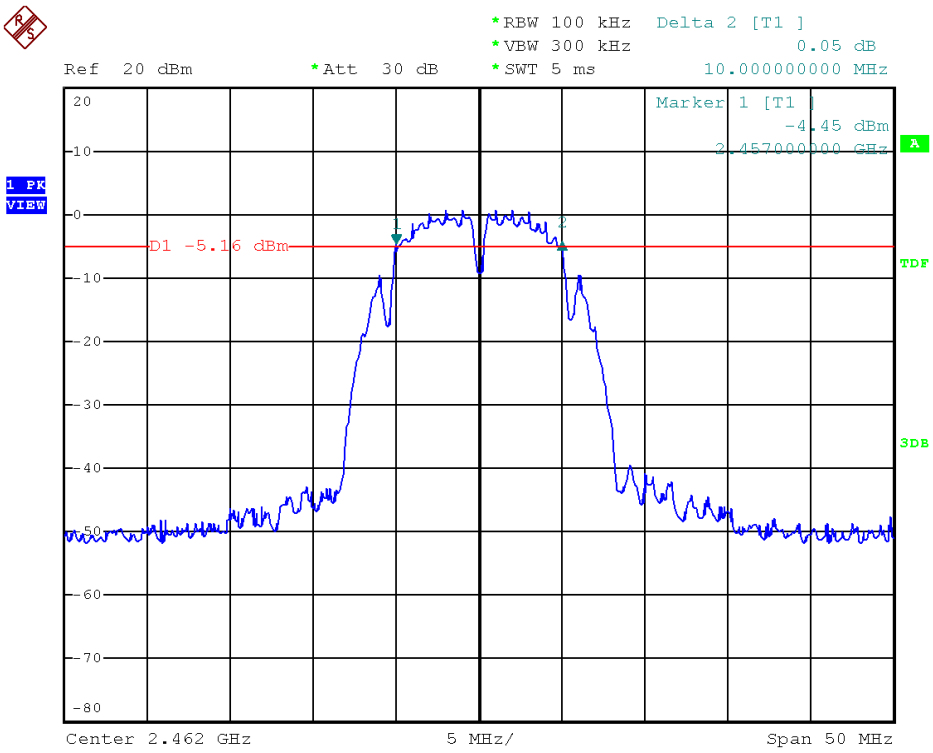
Modulation Standard: 802.11b (1Mbps)
Channel: 01



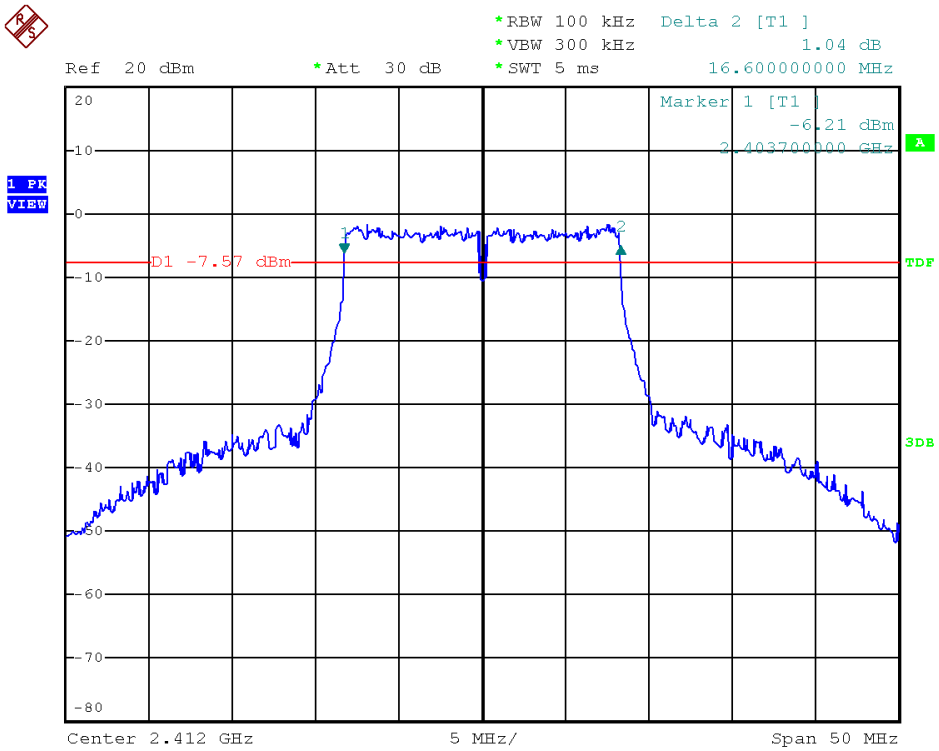
Modulation Standard: 802.11b (1Mbps)
Channel: 06



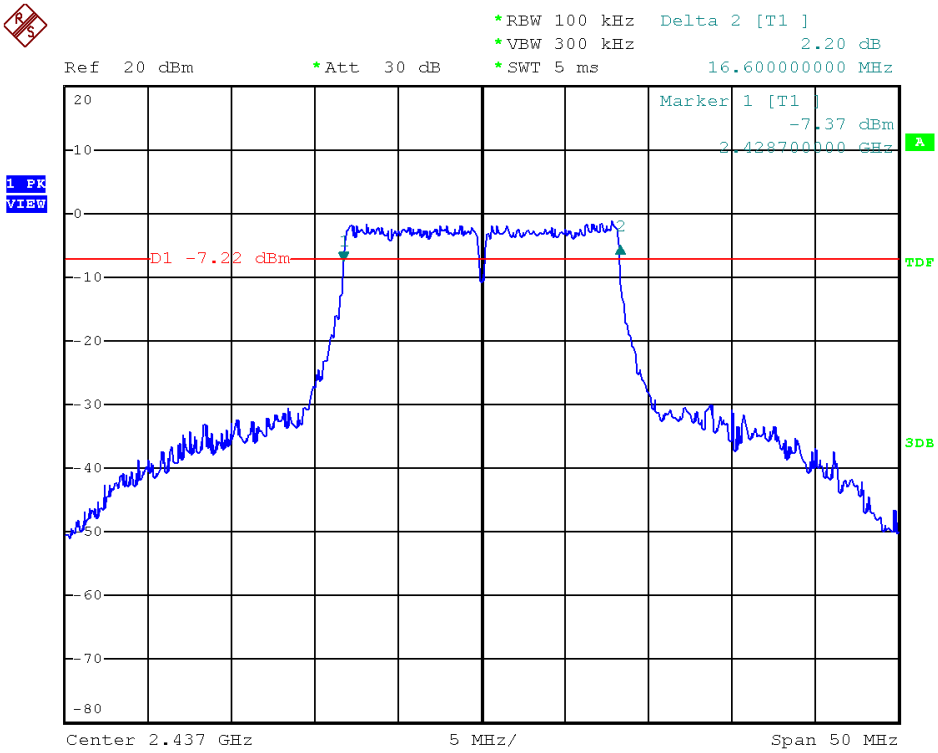
Modulation Standard: 802.11b (1Mbps)
Channel: 11



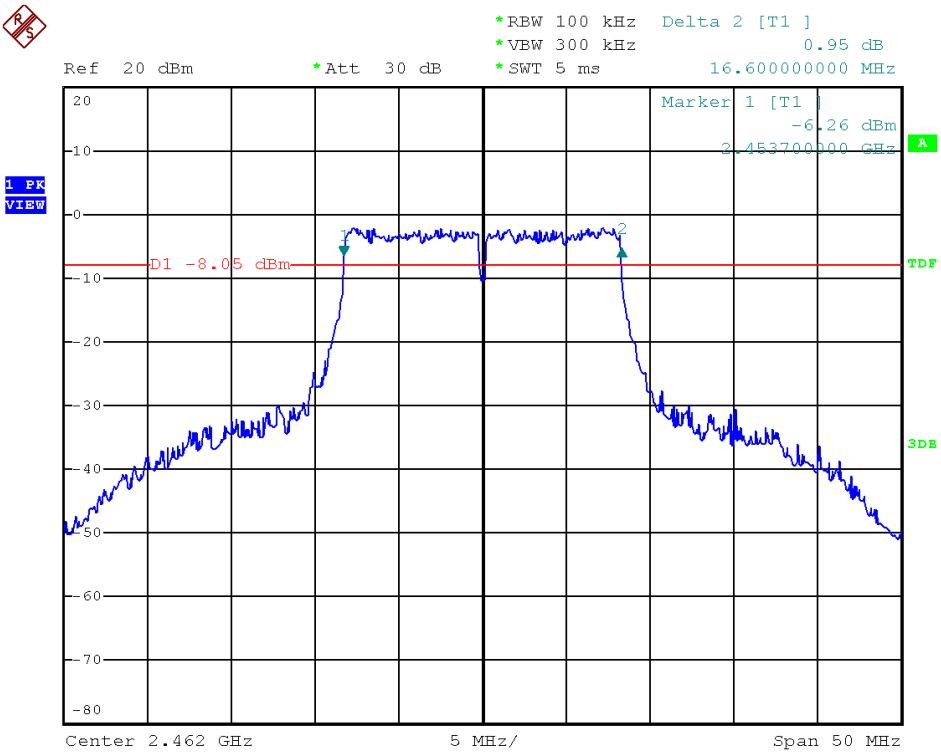
Modulation Standard: 802.11g (6Mbps)
Channel: 01



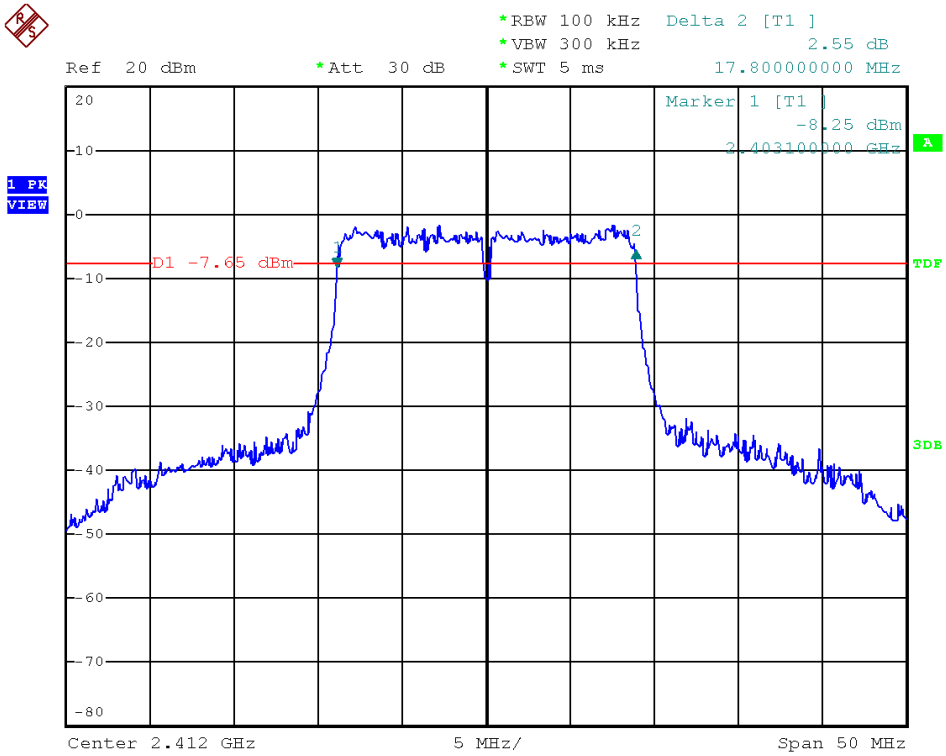
Modulation Standard: 802.11g (6Mbps)
Channel: 06



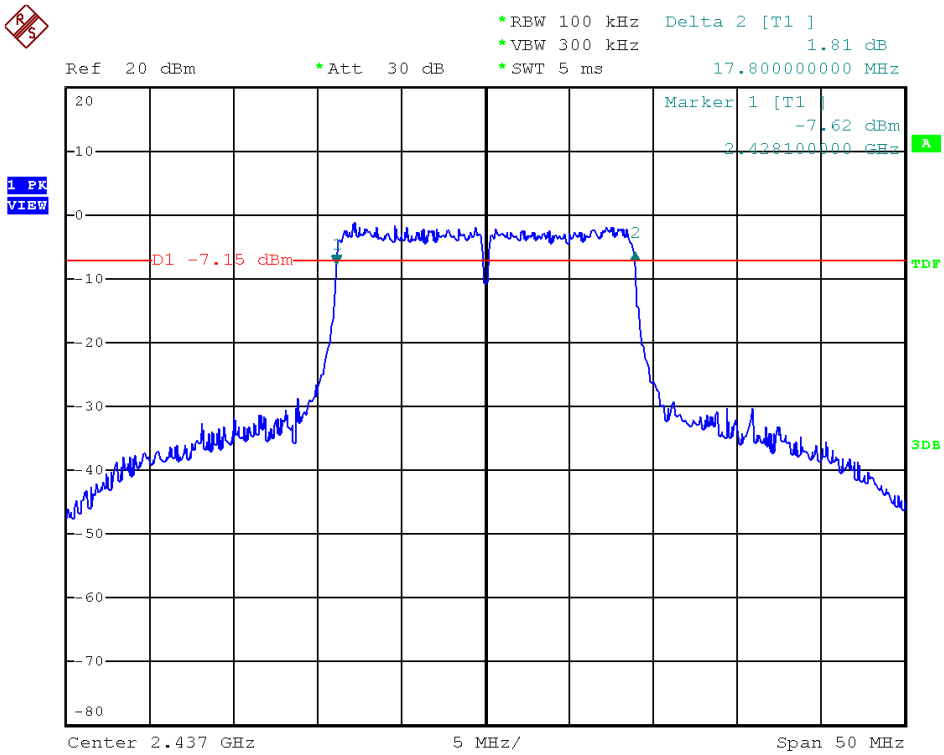
Modulation Standard: 802.11g (6Mbps)
Channel: 11



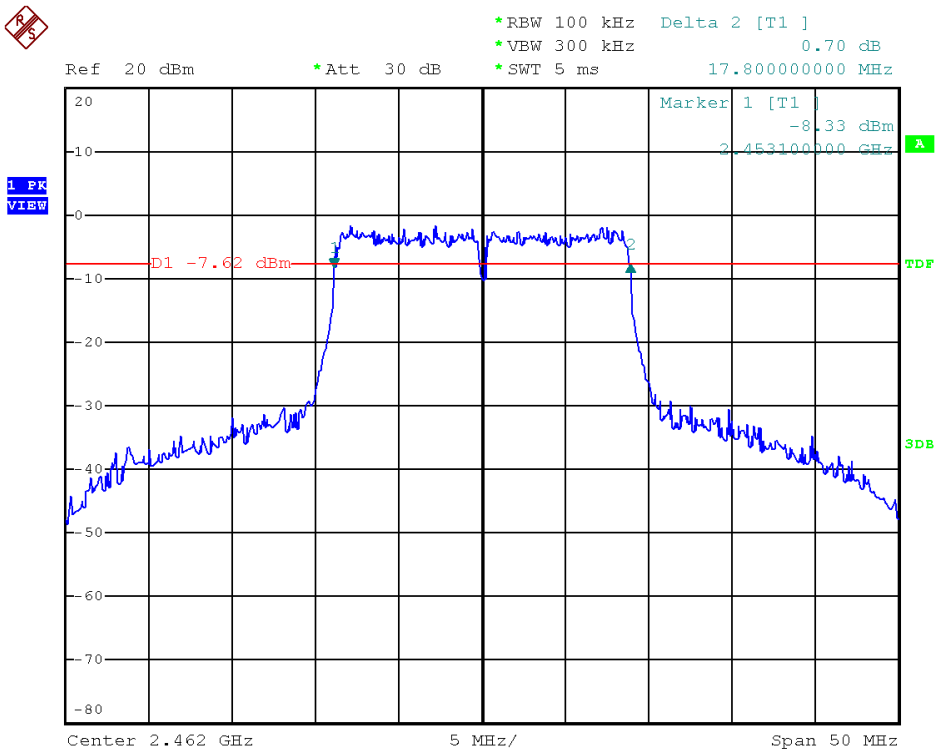
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 01



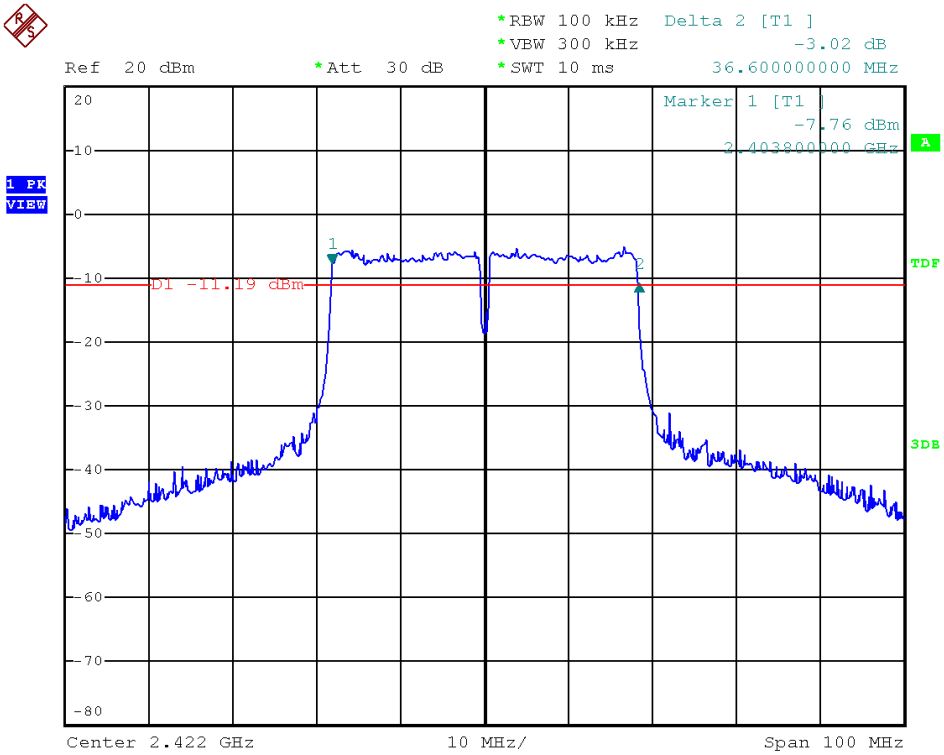
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 06



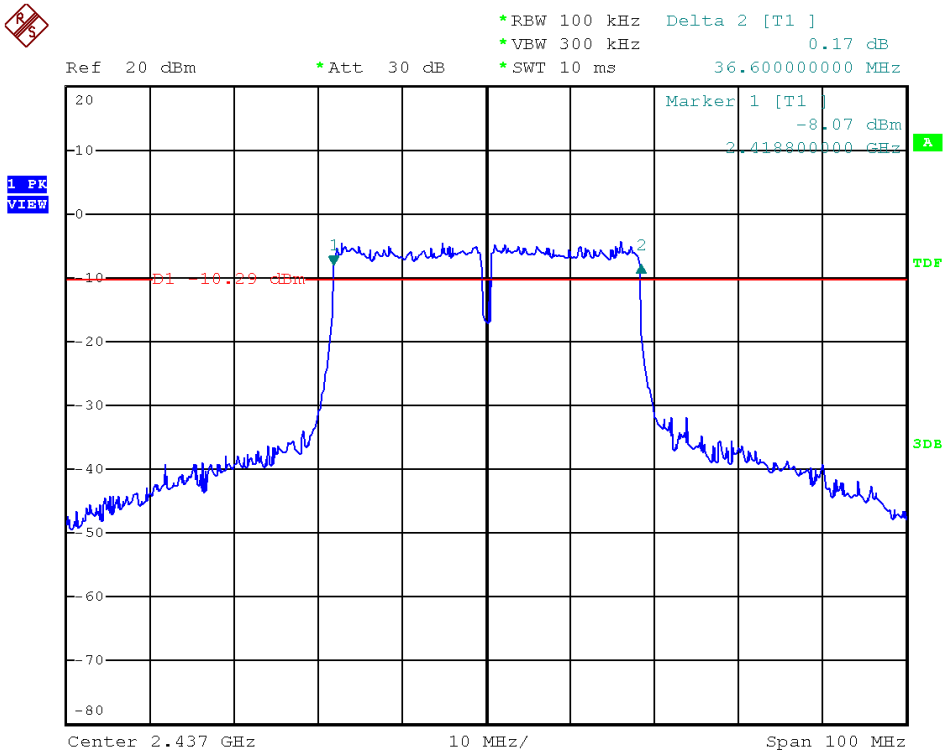
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 11



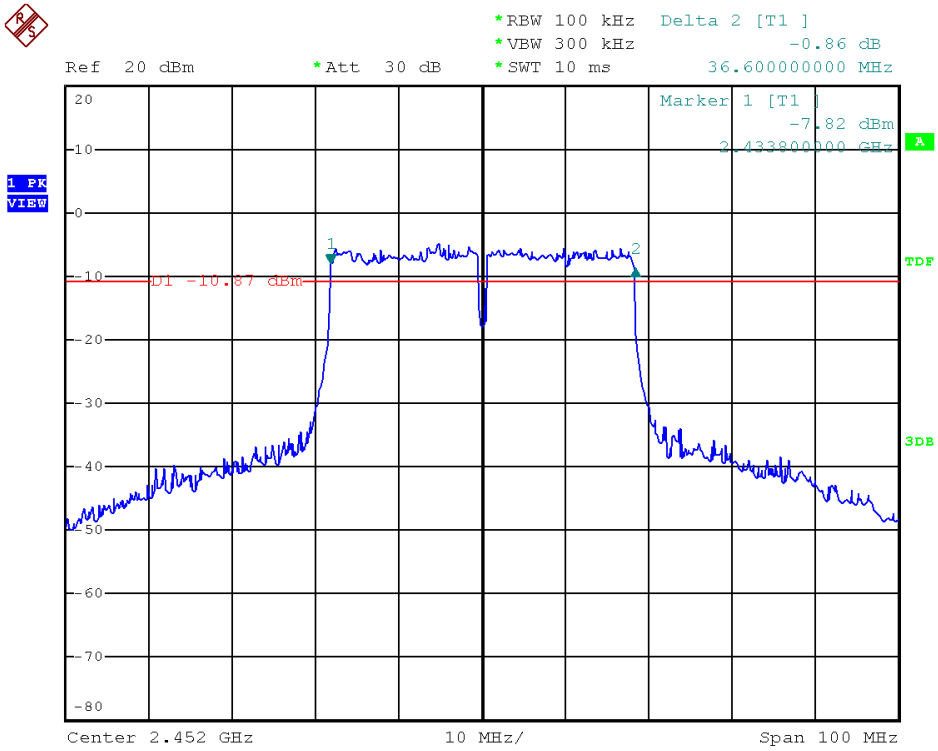
Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 03



Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 06



Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 09



7. Maximum Peak and Average Output Power

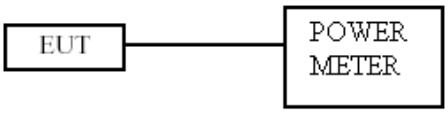
7.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

7.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

7.3 Test Setup Layout



7.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
SERIES POWER METER	ANRITSU	ML2495A	1224005	2014/03/27	2014/03/26
POWER SENSOR	ANRITSU	MA2411B	1207295	2014/03/27	2014/03/26

7.5 Test Result and Data

Test Date: May 27, 2014 Temperature: 22℃

Atmospheric pressure: 1015 hPa Humidity: 55%

Modulation Standard	Channel	Frequency (MHz)	Power Output (dBm)		Peak Power Output (mW)	
			Peak	Average	Peak	Average
802.11b (1Mbps)	01	2412	15.91	12.40	38.99	17.38
	06	2437	16.38	12.90	43.45	19.50
	11	2462	14.92	11.39	31.05	13.77
802.11g (6Mbps)	01	2412	21.71	12.85	148.25	19.28
	06	2437	21.68	12.81	147.23	19.10
	11	2462	20.95	12.63	124.45	18.32
802.11n HT20 (6.5Mbps)	01	2412	21.44	12.72	139.32	18.71
	06	2437	21.52	12.82	141.91	19.14
	11	2462	21.12	12.58	129.42	18.11
802.11n HT40 (13.5Mbps)	03	2422	21.05	12.87	127.35	19.36
	06	2437	21.15	12.95	130.32	19.72
	09	2452	20.82	12.77	120.78	18.92

8. Power Spectral Density

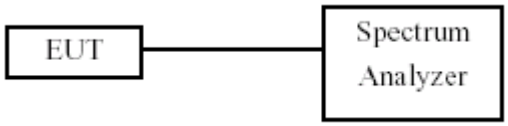
8.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

8.2 Test Procedures

a. The transmitter output was connected to spectrum analyzer.
b. The spectrum analyzer's resolution bandwidth were set at 3KHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.
c. The power spectral density was measured and recorded.

8.3 Test Setup Layout



8.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2014/03/27	2015/03/26

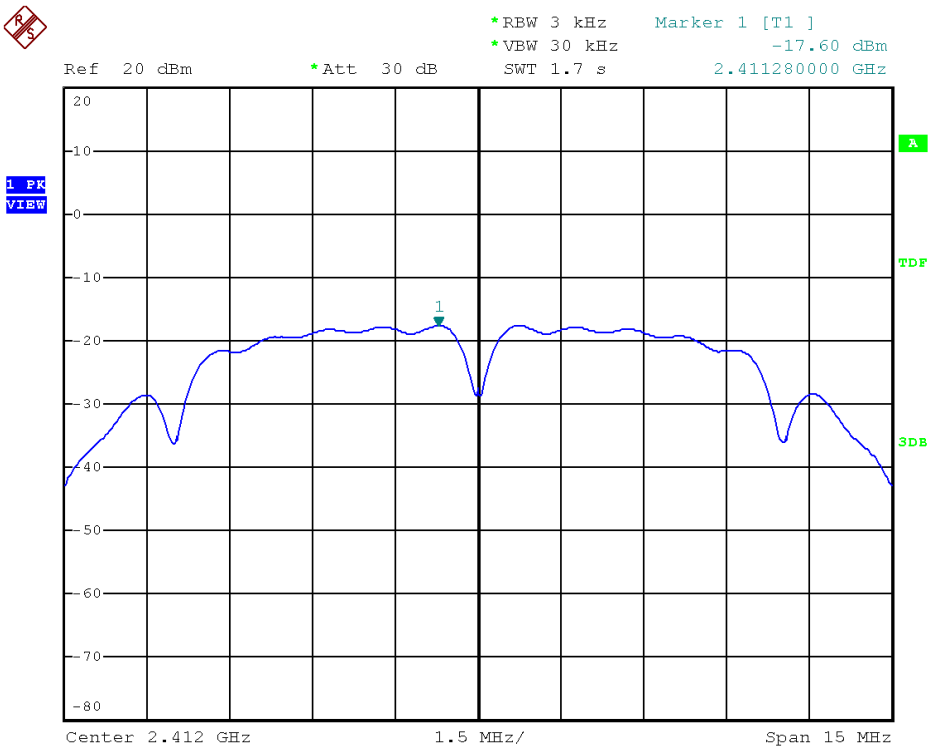
8.5 Test Result and Data

Test Date: May 27, 2014 Temperature: 22℃

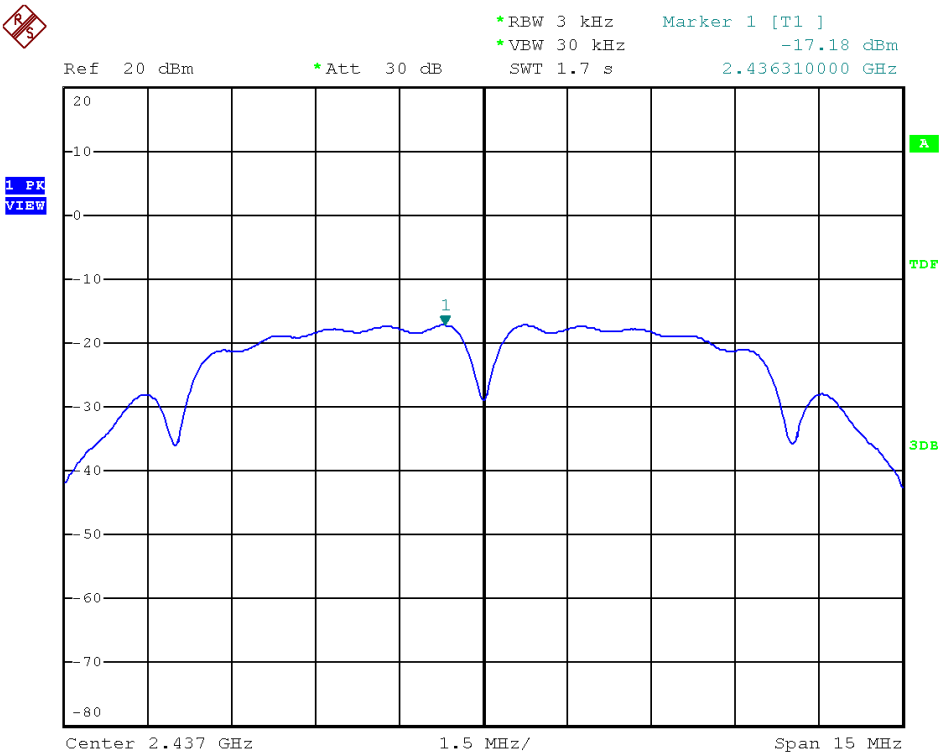
Atmospheric pressure: 1015 hPa Humidity: 55%

Modulation Standard	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)
802.11b (1Mbps)	01	2412	-17.60
	06	2437	-17.18
	11	2462	-17.50
802.11g (6Mbps)	01	2412	-15.85
	06	2437	-15.23
	11	2462	-15.09
802.11n HT20 (6.5Mbps)	01	2412	-15.90
	06	2437	-14.52
	11	2462	-15.05
802.11n HT40 (13.5Mbps)	03	2422	-17.34
	06	2437	-17.65
	09	2452	-18.01

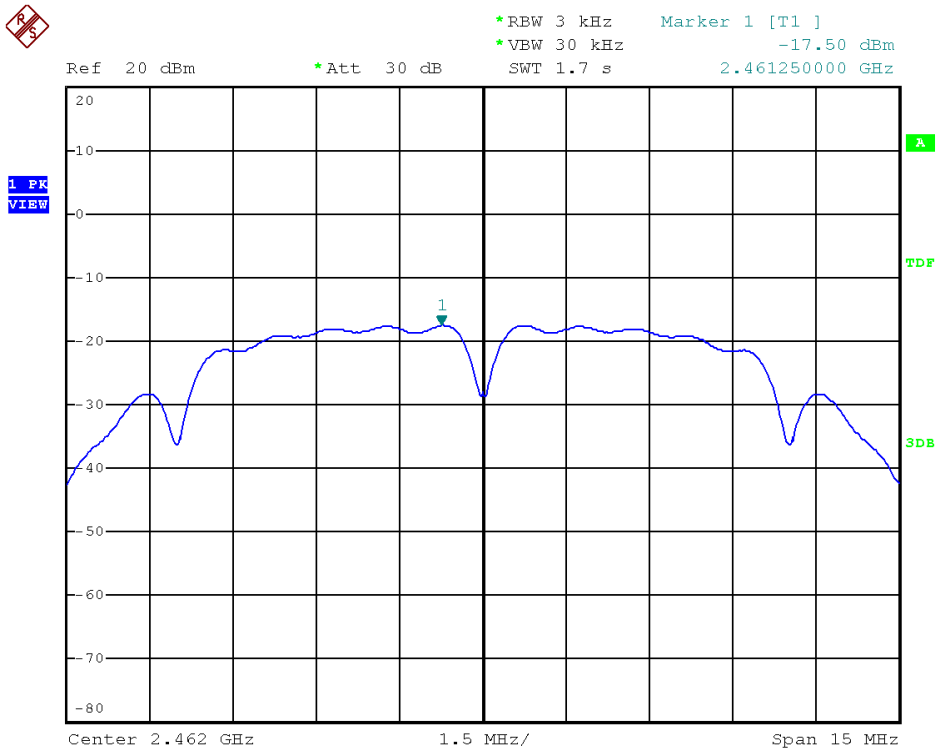
Modulation Standard: 802.11b (1Mbps)
Channel: 01



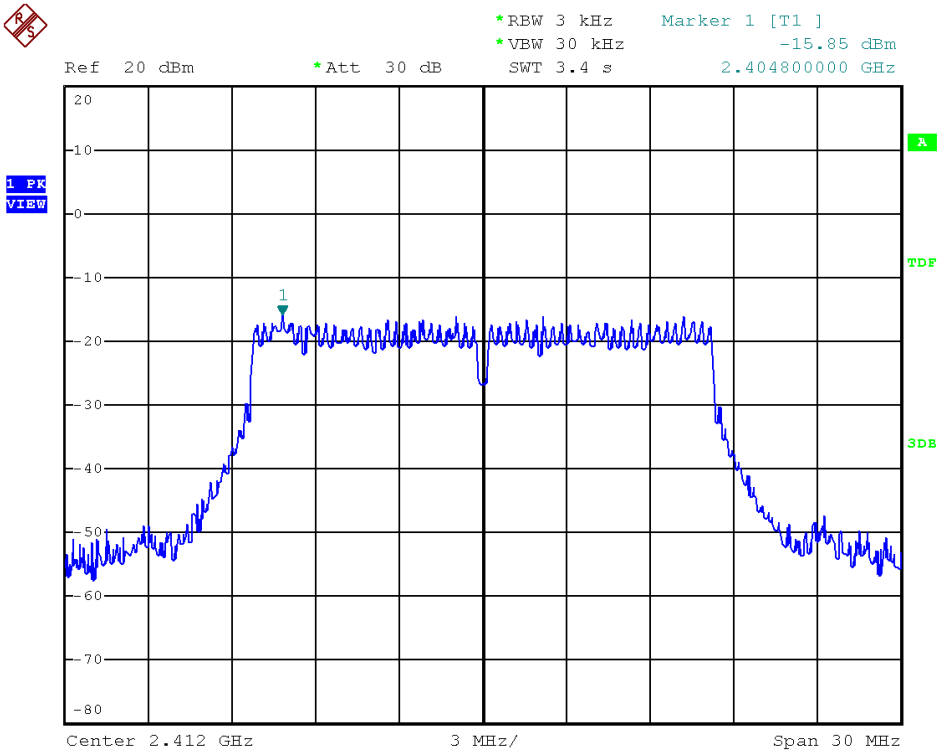
Modulation Standard: 802.11b (1Mbps)
Channel: 06



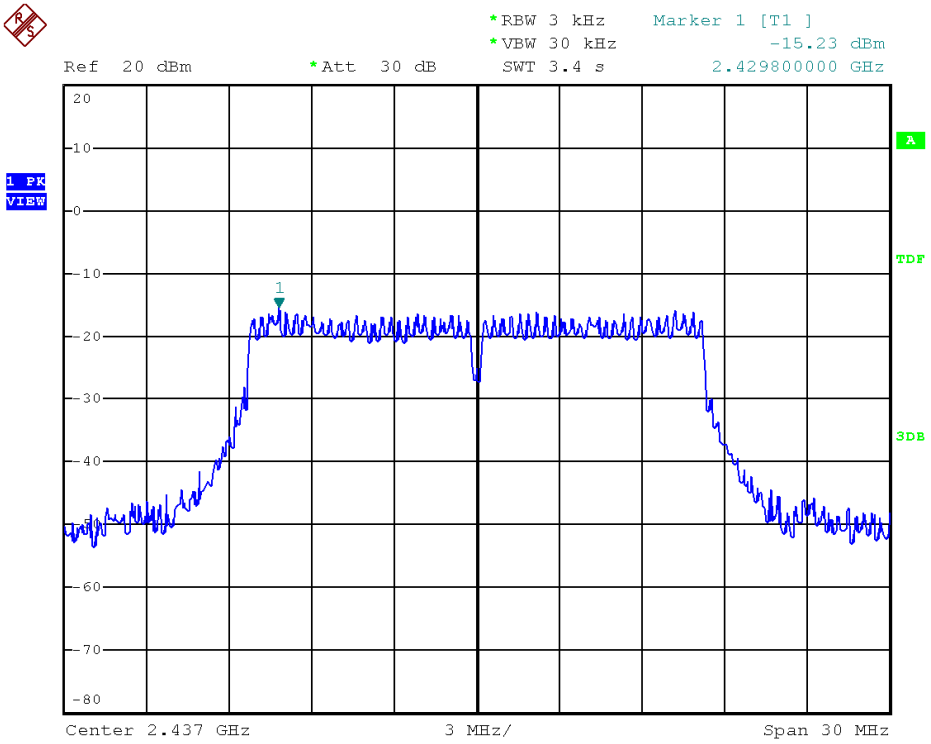
Modulation Standard: 802.11b (1Mbps)
Channel: 11



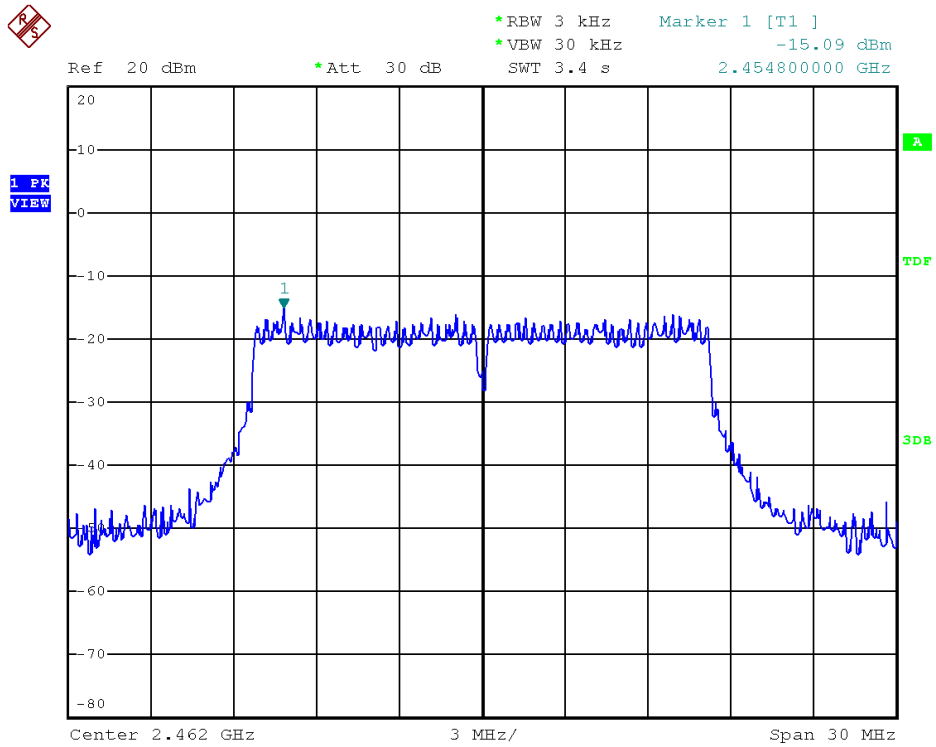
Modulation Standard: 802.11g (6Mbps)
Channel: 01



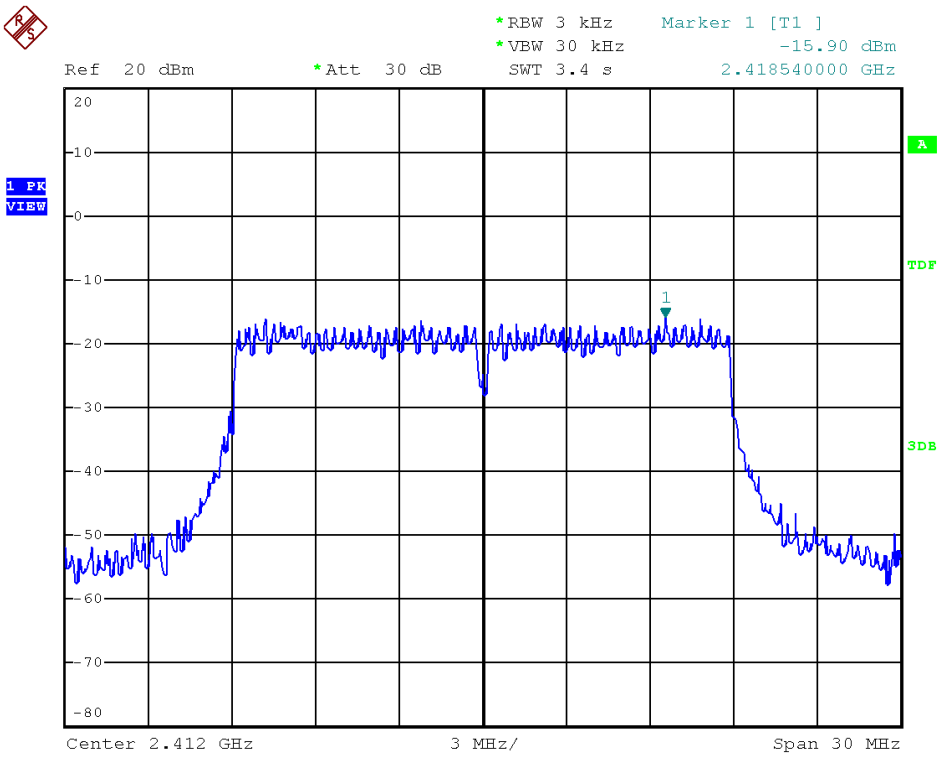
Modulation Standard: 802.11g (6Mbps)
Channel: 06



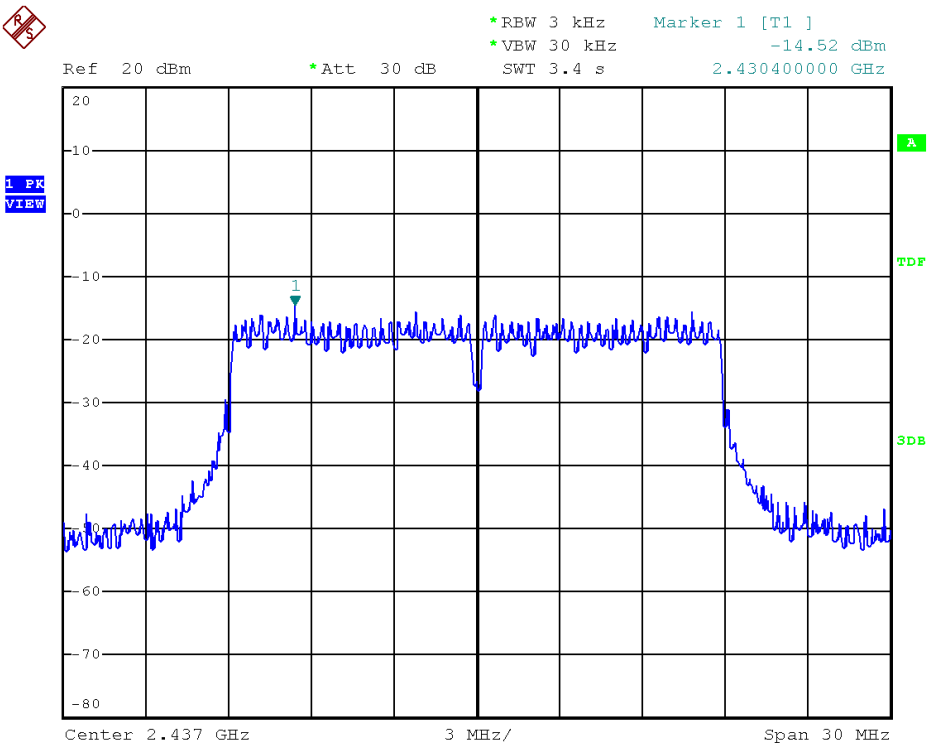
Modulation Standard: 802.11g (6Mbps)
Channel: 11



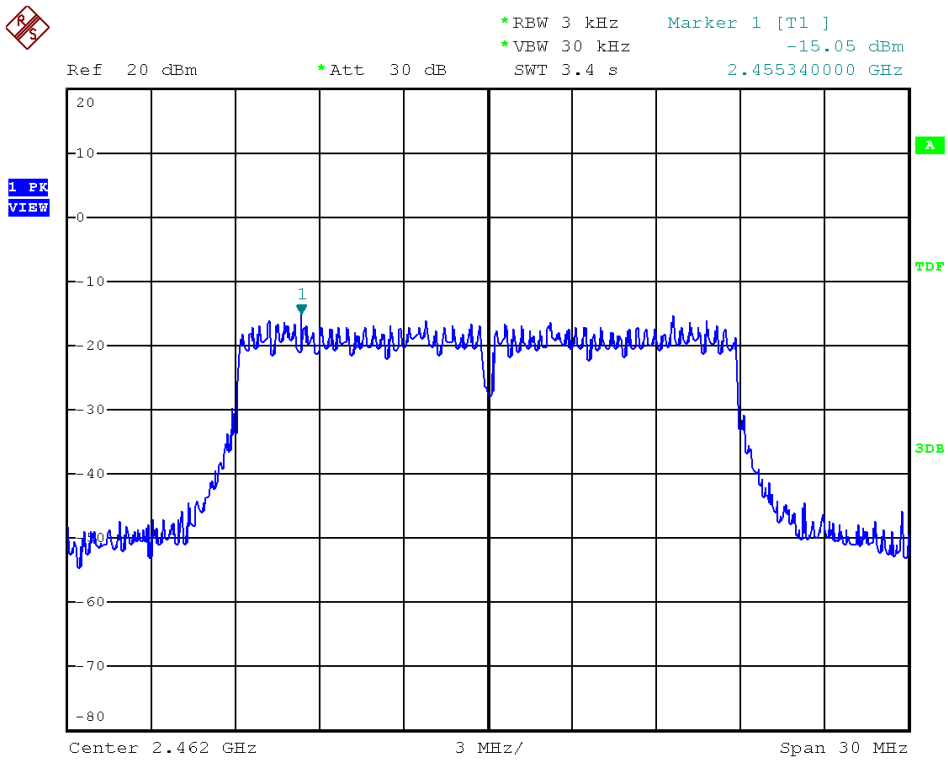
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 01



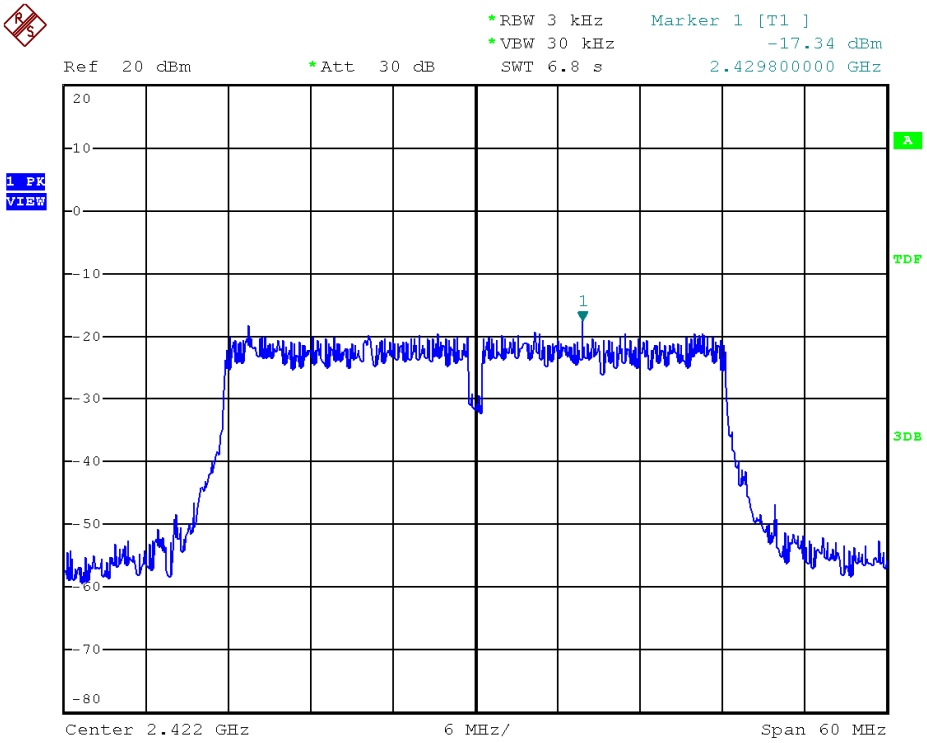
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 06



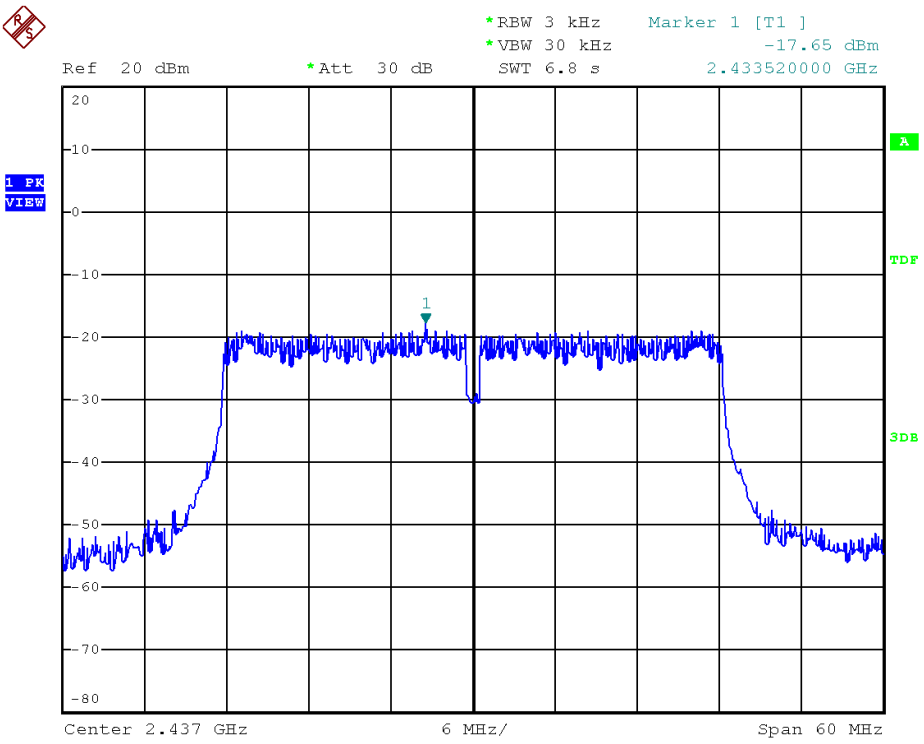
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 11



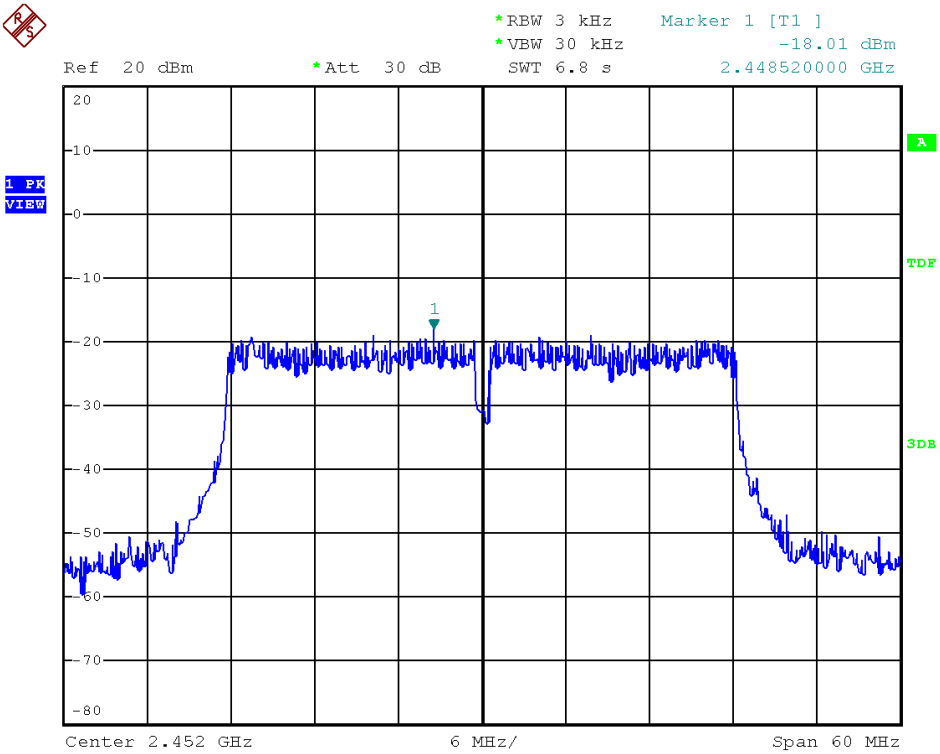
Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 03



Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 06



Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 09



9. Band Edges Measurement

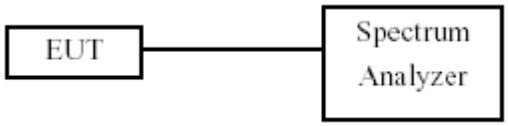
9.1 Test Limit

Below –20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

9.2 Test Procedure

a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. The band edges was measured and recorded.

9.3 Test Setup Layout



9.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2014/03/24	2015/03/26

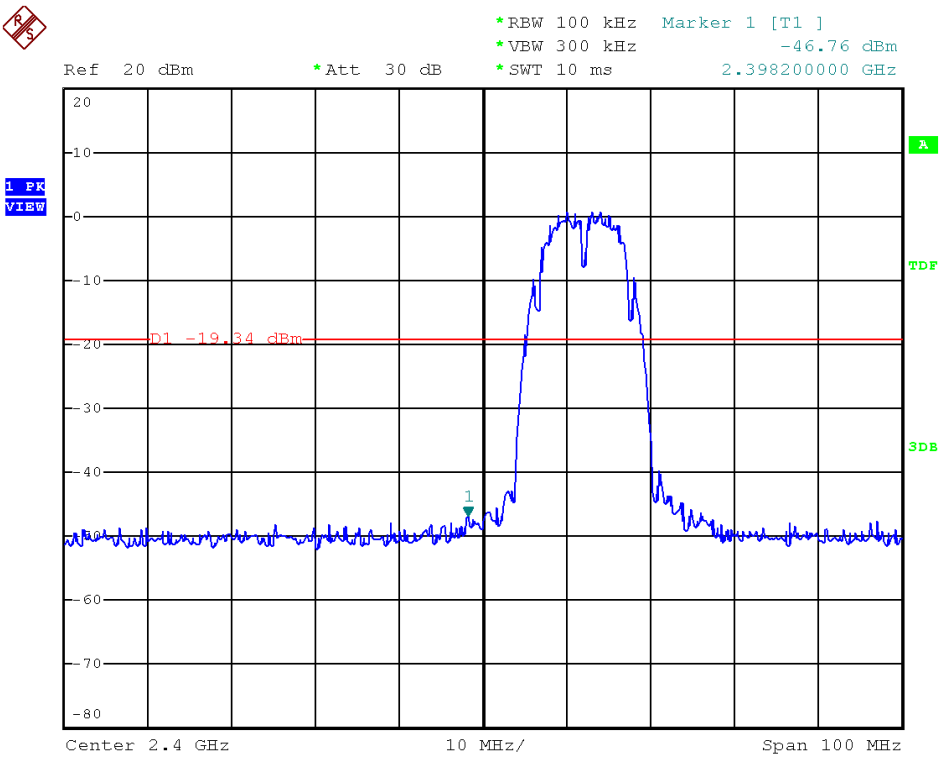
9.5 Test Result and Data

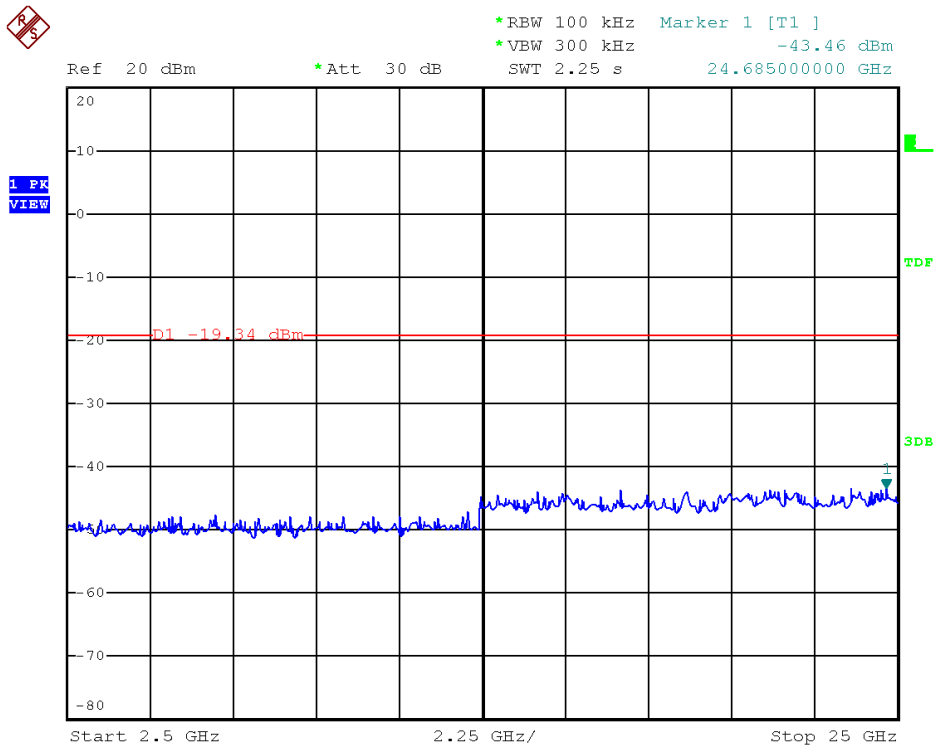
Test Date: May 27, 2014 Temperature: 22℃

Atmospheric pressure: 1015 hPa Humidity: 55%

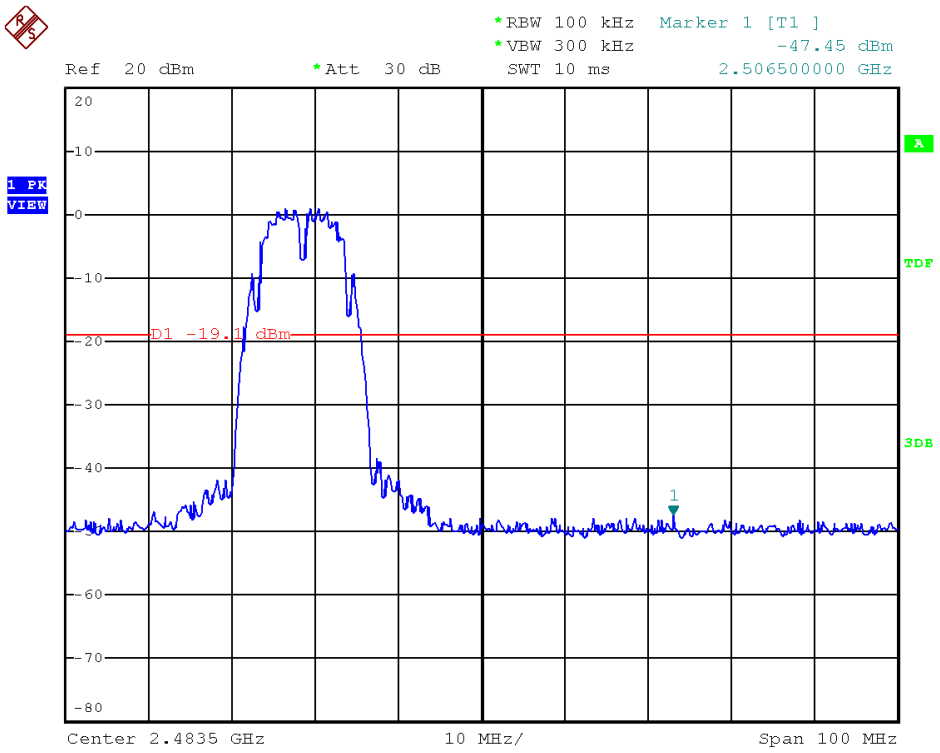
Modulation Standard	Channel	Frequency (MHz)	maximum value in frequency(MHz)	maximum value (dBm)	Limit (dBm)
802.11b (1Mbps)	01	2412	24685	-43.46	-19.34
	11	2462	23875	-41.74	-19.10
802.11g (6Mbps)	01	2412	2399.8	-31.49	-21.51
	11	2462	2484.1	-42.05	-21.64
802.11n HT20 (6.5Mbps)	01	2412	2398.8	-33.97	-21.82
	11	2462	2483.9	-38.31	-21.81
802.11n HT40 (13.5Mbps)	03	2422	2398.6	-35.76	-25.27
	09	2452	2485.1	-37.80	-24.62

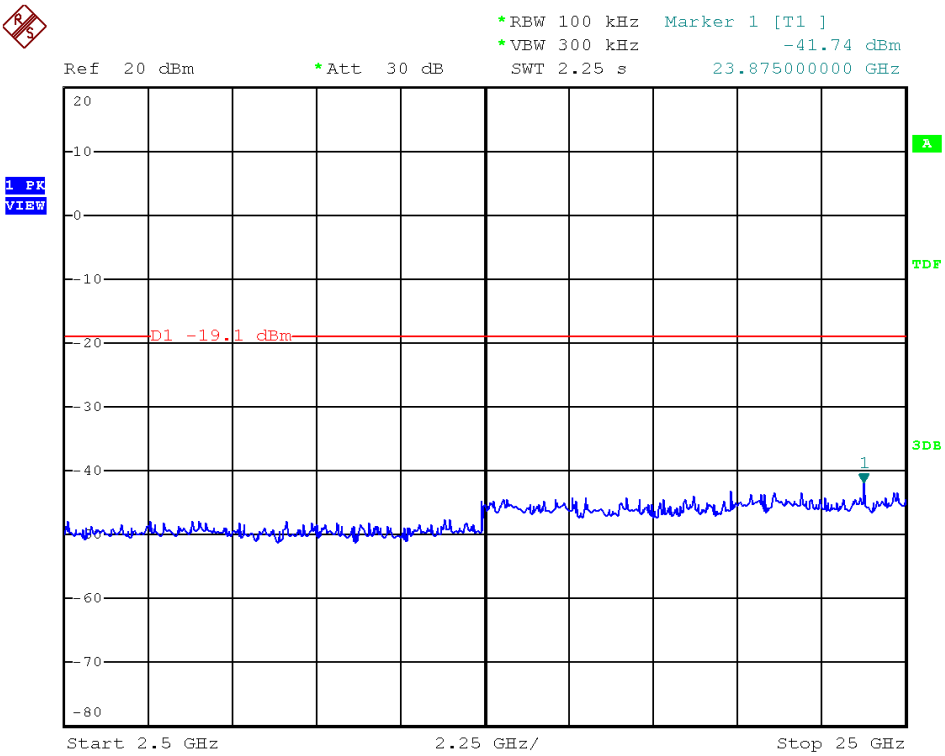
Modulation Standard: 802.11b (1Mbps)
Channel: 01



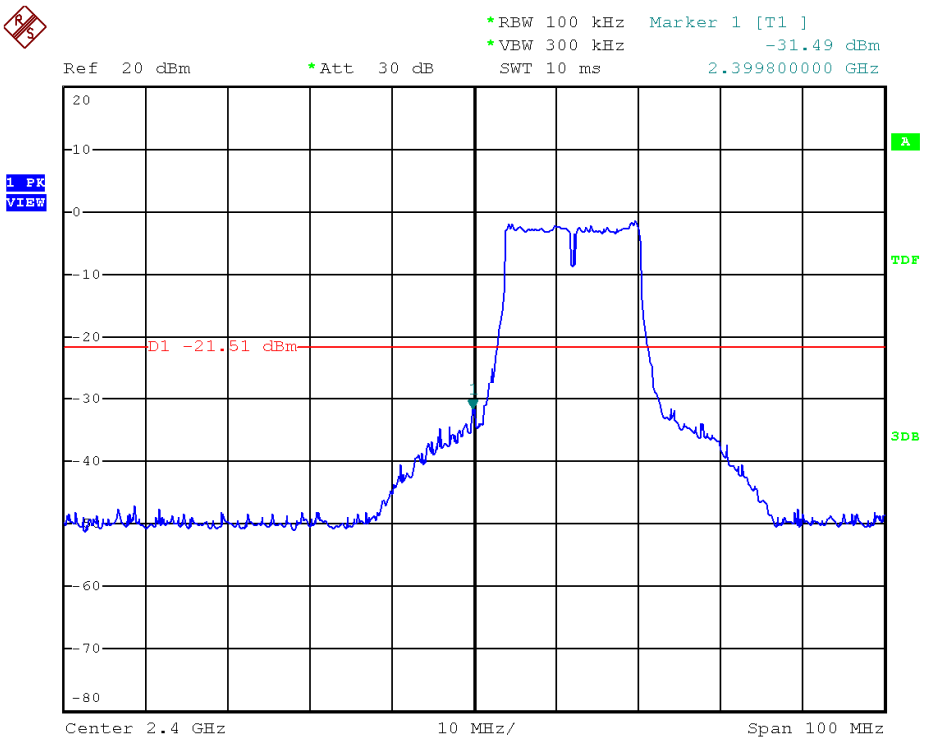


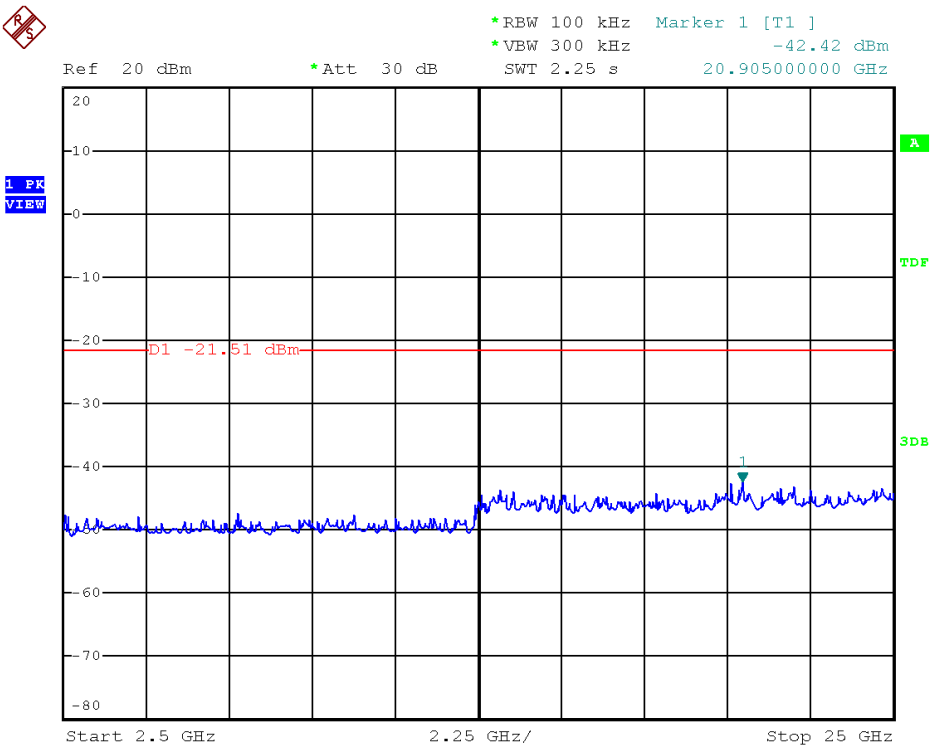
Modulation Standard: 802.11b (1Mbps)
Channel: 11



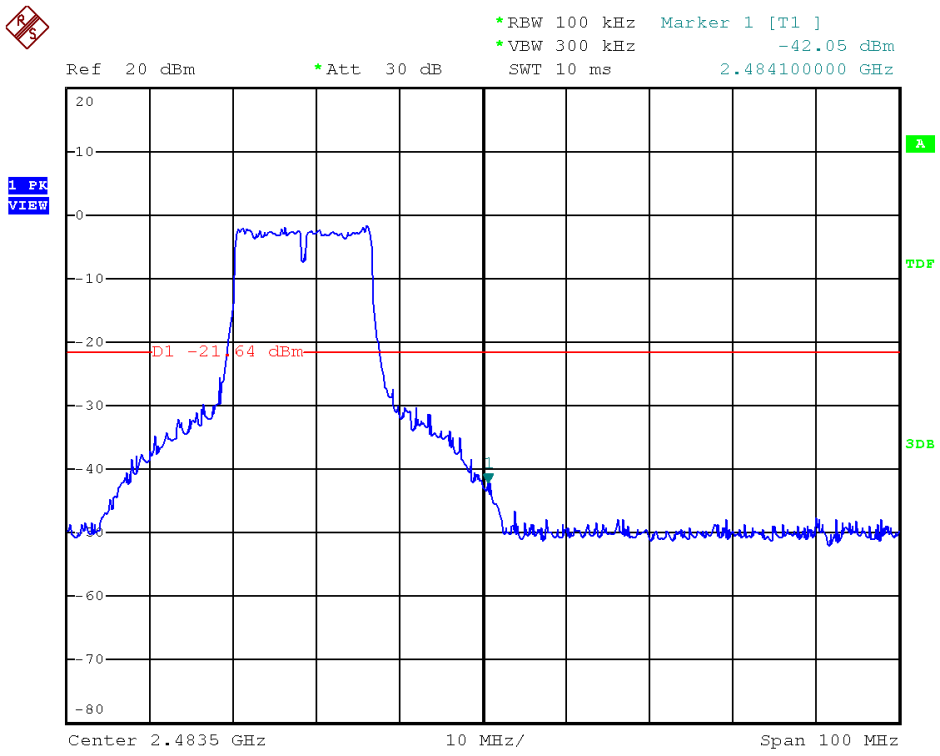


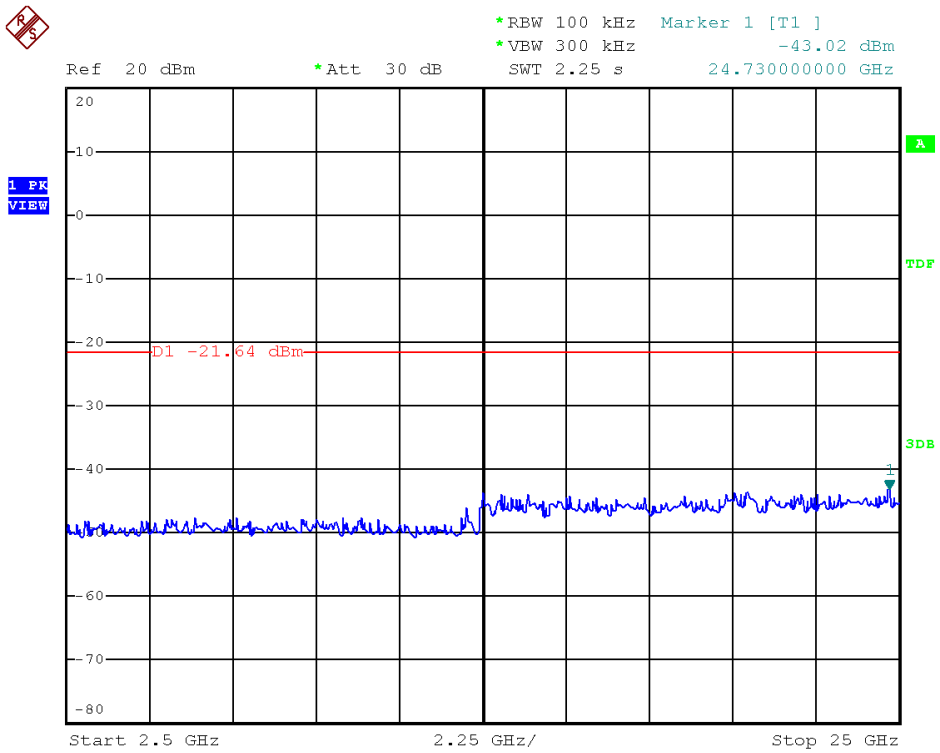
Modulation Standard: 802.11g (6Mbps)
Channel: 01



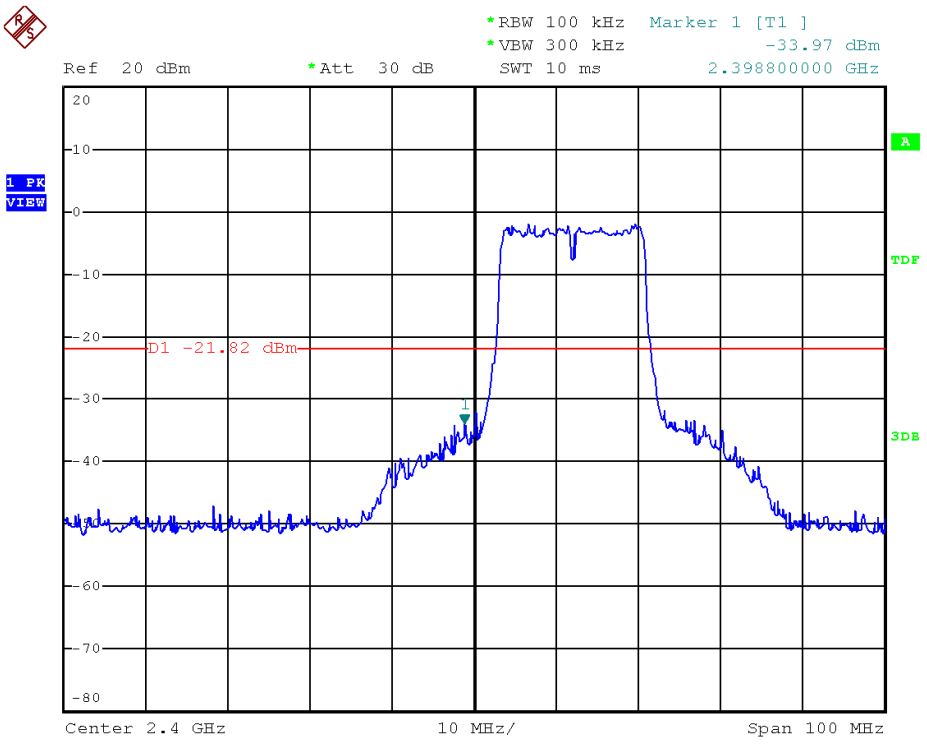


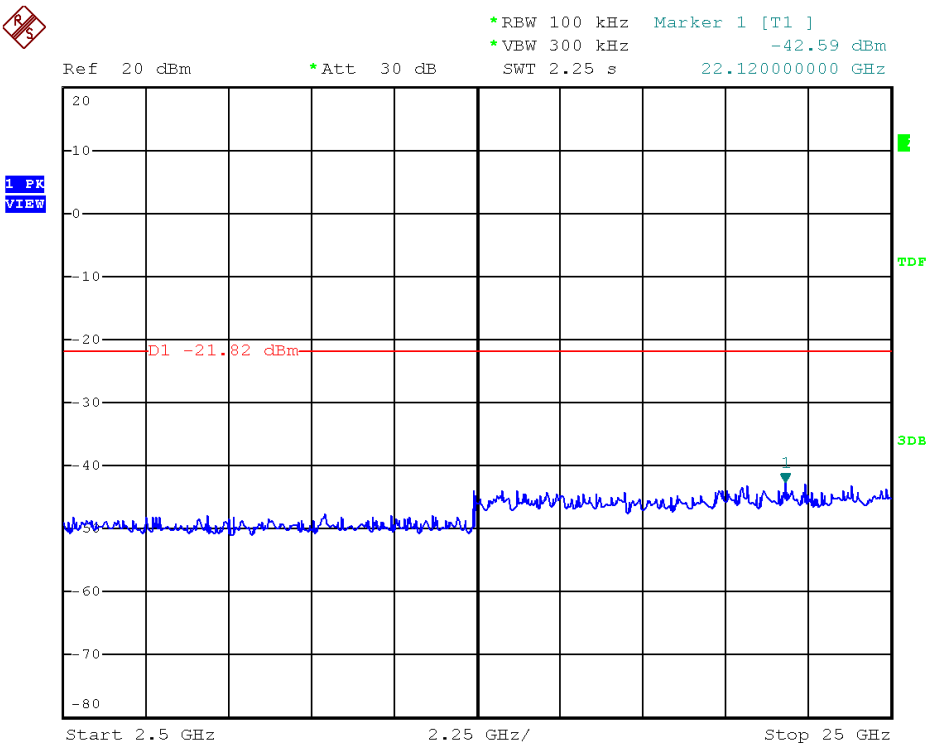
Modulation Standard: 802.11g (6Mbps)
Channel: 11



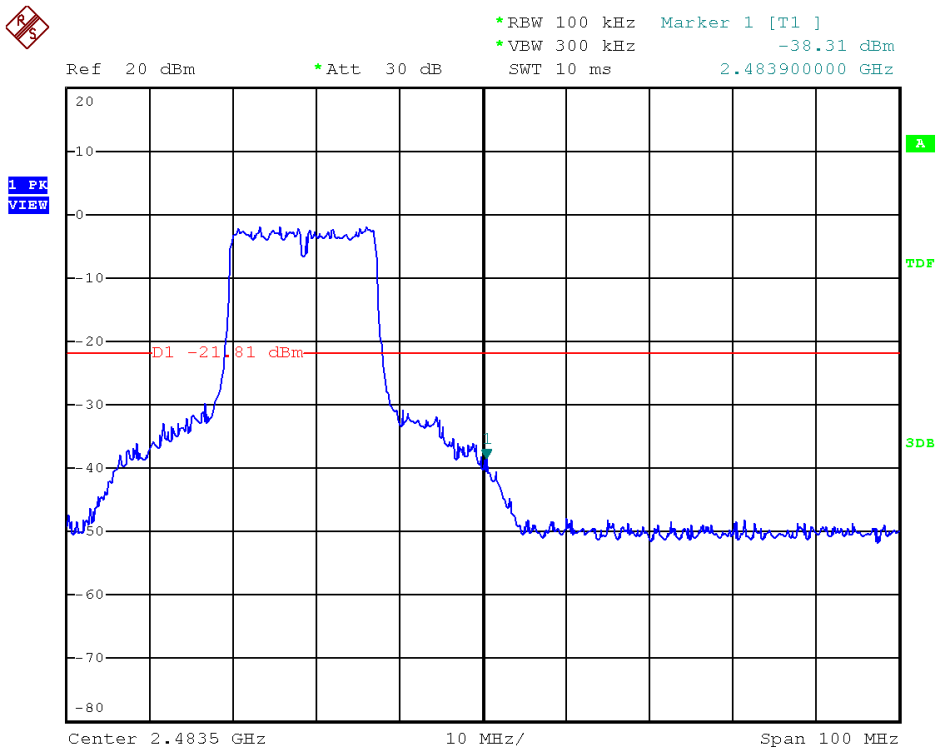


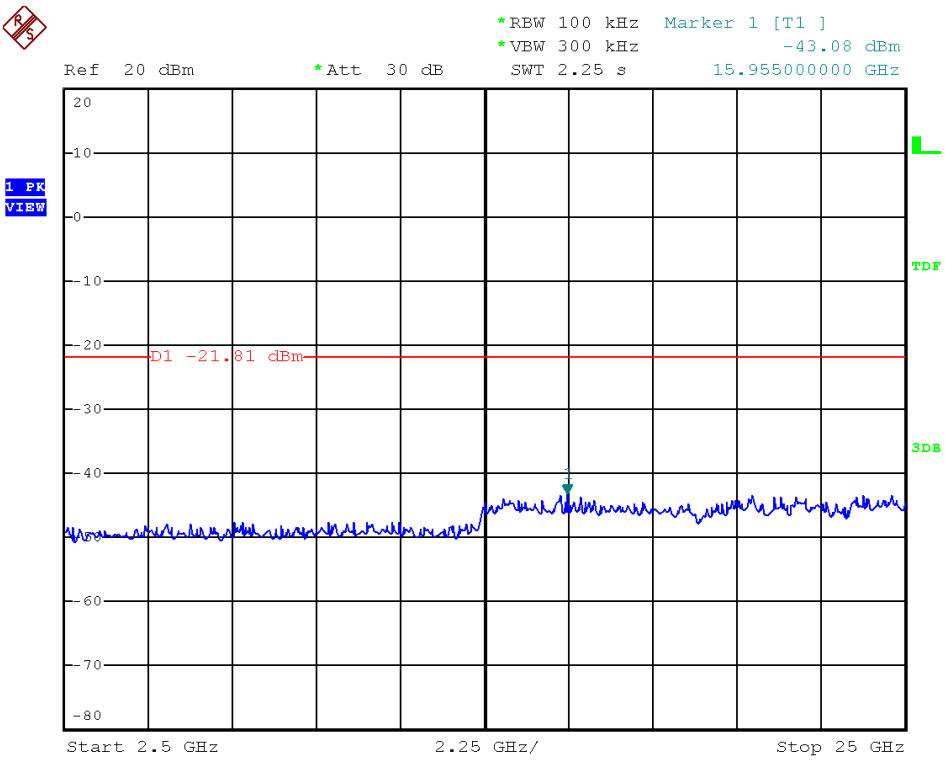
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 01



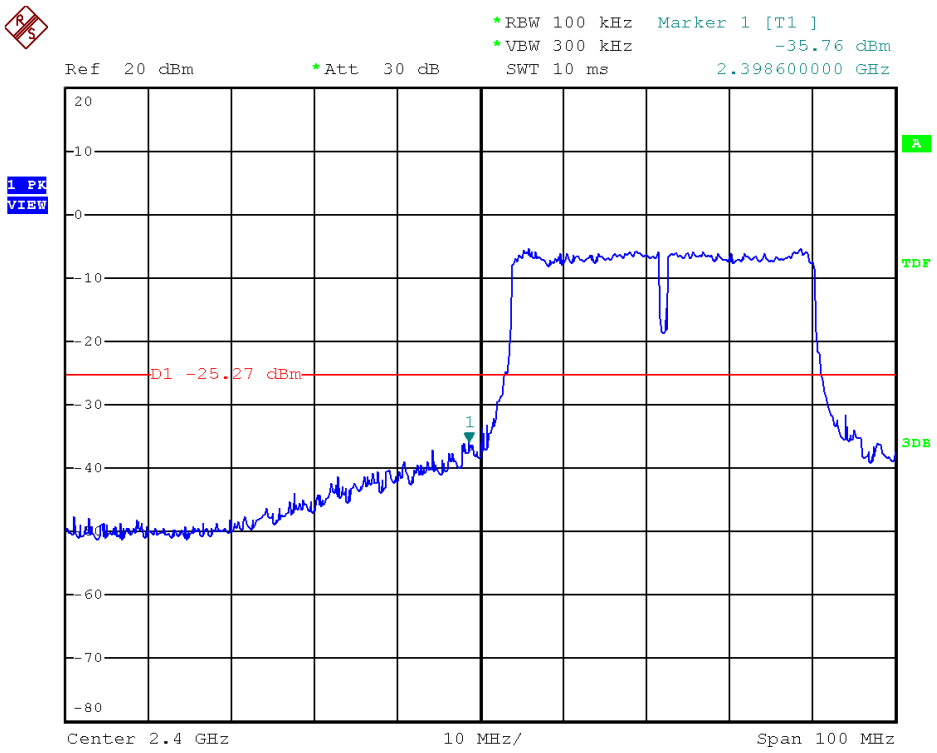


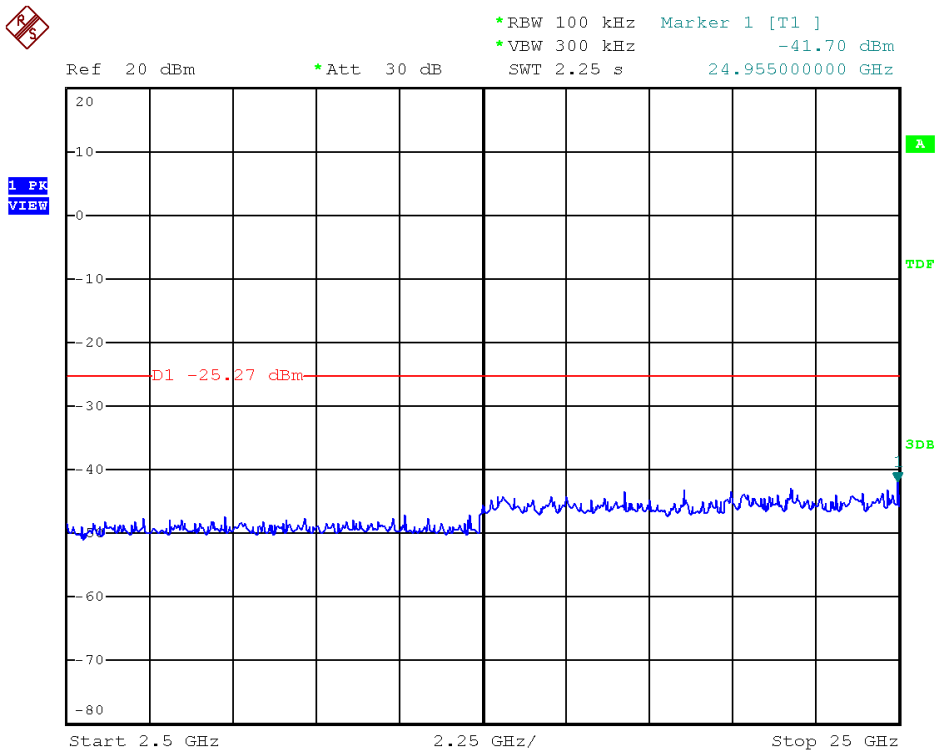
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 11



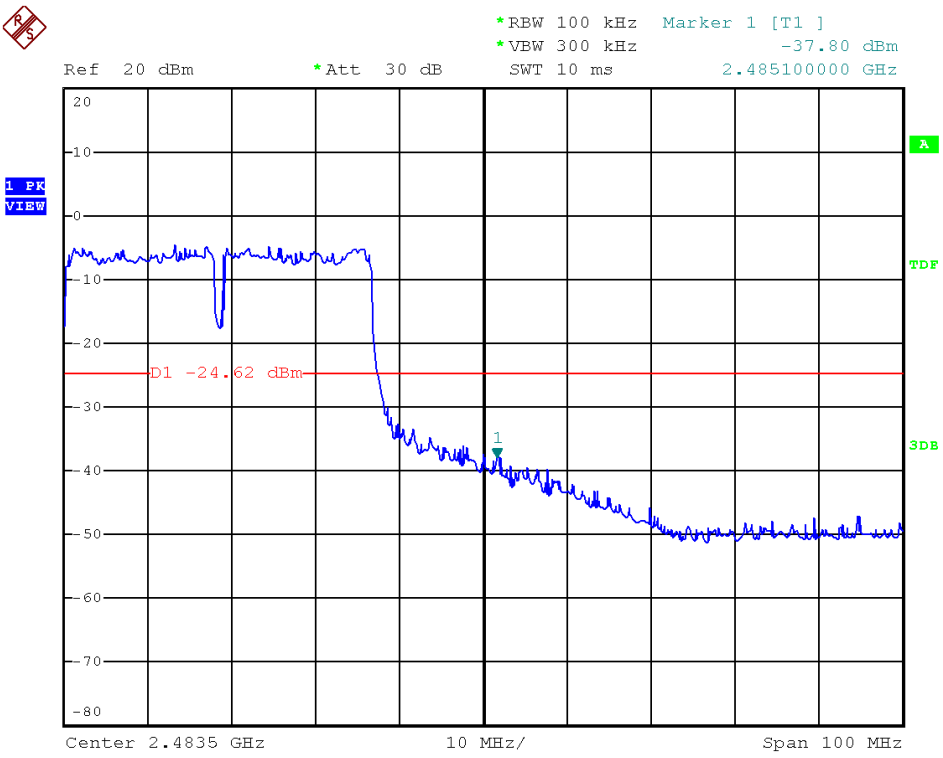


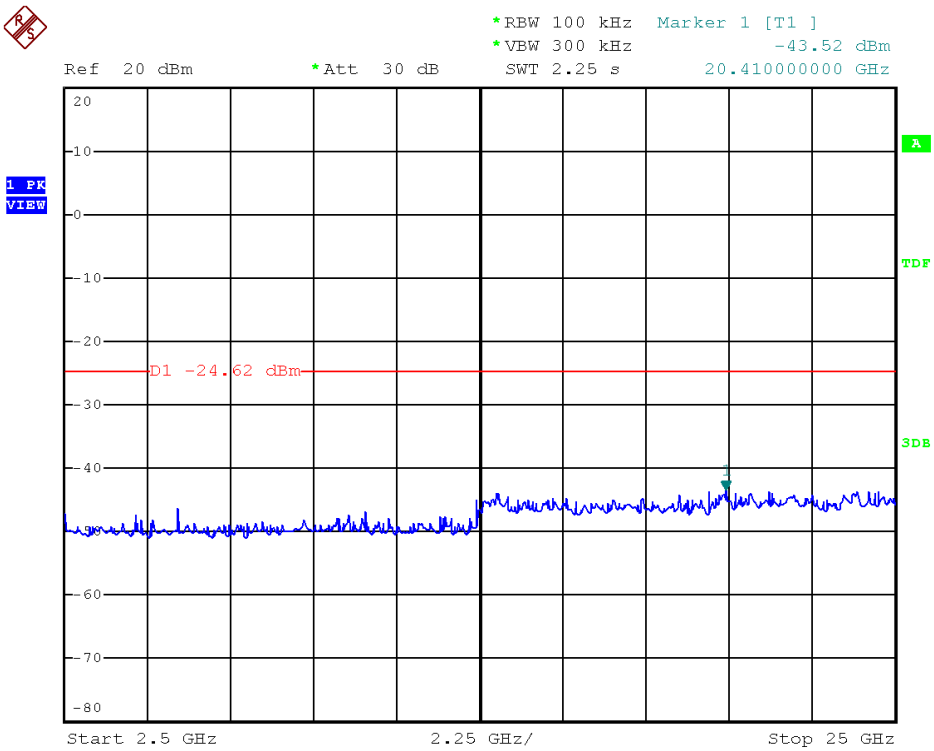
Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 03





Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 09





9.6 Restrict Band Emission Measurement Data

Test Date: May 29, 2014 Temperature: 23 ℃

Atmospheric pressure: 1008 hPa Humidity: 56 %

Modulation Standard: IEEE 802.11b (1Mbps)

Channel 1										Fundamental Frequency: 2412 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2387.01	H	46.62	6.50	53.12	Peak	74	54	-20.88	1.00	133
----	H	----	----	----	Ave	74	54	----	----	----
2388.95	V	46.24	6.50	52.74	Peak	74	54	-21.26	1.00	211
----	V	----	----	----	Ave	74	54	----	----	----
Channel 11										Fundamental Frequency: 2462 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2482.98	H	45.13	6.64	51.77	Peak	74	54	-22.23	1.00	222
----	H	----	----	----	Ave	74	54	----	----	---
2382.71	V	46.22	6.64	52.84	Peak	74	54	-21.16	1.00	215
----	V	----	----	---	Ave	74	54	----	---	---

Modulation Standard: IEEE 802.11g (6Mbps)

Channel 1										Fundamental Frequency: 2412 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2389.56	H	64.40	6.50	70.90	Peak	74	54	-3.10	1.00	247
2389.56	H	45.26	6.50	51.76	Ave	74	54	-2.24	1.00	247
2389.56	V	64.27	6.50	70.77	Peak	74	54	-3.23	1.00	255
2390.00	V	34.34	6.50	40.84	Ave	74	54	-13.16	1.00	255
Channel 11										Fundamental Frequency: 2462 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2483.70	H	55.92	6.64	62.56	Peak	74	54	-11.44	1.00	238
2483.54	H	38.25	6.64	44.89	Ave	74	54	-9.11	1.00	238
2483.70	V	56.37	6.64	63.01	Peak	74	54	-10.99	1.00	233
2483.70	V	38.74	6.64	45.38	Ave	74	54	-8.62	1.00	233

Modulation Standard: IEEE 802.11n HT20 (6.5Mbps)

Channel 1										Fundamental Frequency: 2412 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2389.87	H	62.09	6.50	68.59	Peak	74	54	-5.41	1.00	245
2389.87	H	46.32	6.50	52.82	Ave	74	54	-1.18	1.00	245
2389.97	V	62.23	6.50	68.73	Peak	74	54	-5.27	1.00	238
2389.97	V	45.57	6.50	52.07	Ave	74	54	-1.93	1.00	238
Channel 11										Fundamental Frequency: 2462 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2483.55	H	55.78	6.64	62.42	Peak	74	54	-11.58	1.00	243
2483.55	H	30.49	6.64	37.13	Ave	74	54	-16.87	1.00	243
2483.51	V	56.00	6.64	62.64	Peak	74	54	-11.36	1.00	246
2483.55	V	30.43	6.64	37.07	Ave	74	54	-16.93	1.00	246

Modulation Standard: IEEE 802.11n HT40 (13.5Mbps)

Channel 3										Fundamental Frequency: 2422 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2389.74	H	45.70	6.50	52.2	Peak	74	54	-21.80	1.00	244
----	H	----	----	----	Ave	74	54	----	1.00	----
2389.97	V	52.95	6.50	59.09	Peak	74	54	-14.91	1.00	251
2389.86	V	35.04	6.50	41.54	Ave	74	54	-12.46	1.00	251
Channel 9										Fundamental Frequency: 2452 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2484.98	H	45.77	6.64	52.41	Peak	74	54	-21.59	1.00	252
----	H	----	-----	----	Ave	74	54	----	1.00	----
2486.56	V	46.10	6.64	52.74	Peak	74	54	-21.26	1.00	255
----	V	----	----	----	Ave	74	54	----	1.00	----

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

10. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

10.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.